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HAPPY NEW YEAR

Come and get it!

• Look at him go! First in any chow line, this rookie's enthusiastic gorging is offset, fortunately, by a strenuous program of exercise. His counterpart among the "Rocking Chair Brigade" still has to be considered. When over-indulgence and lack of exercise are causative factors in constipation, relief may often be obtained with Petrogalar.*

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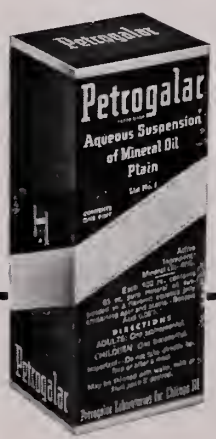

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Guest Editorial

Medical Society Prepayment Plans

IN the swiftly changing world of today many roads are open but the one marked status quo is closed. If the medical profession does not choose where it will go, less competent powers will choose for it.

The American Medical Association through its House of Delegates and some twenty state medical societies has already chosen the road of medical society prepayment plans. It is not an easy highway. It is an almost uncharted track through difficult and little known territory. But medicine has been hewing out that sort of hard passages for many centuries in its campaign against disease. There have always been quislings and quacks who claimed to know easier and more pleasant ways than those mapped by the physicians.

Politicians know that the achievements of medicine have made medical care one of the most highly prized assets of modern civilization, and they are now trying to grab that asset and use it as trading stock for votes and political power. The medical profession knows that medical care so-used loses much of its value.

Medical society prepayment plans offer a way to put this asset at the service of the public, without thus destroying its value. The medical profession is little interested in methods of payment if these are sufficient to maintain medical education, research and the other elements which have made American service the most effective in the world in fighting disease. That profession is interested to see, in the words of the first of the Ten Principles adopted by the House of Delegates, that "all features of medical service in any method of medical practice should be under the control of the medical profession". With that principle assured medical societies have whole heartedly cooperated with almost every type of social organization, and have greatly improved both medical service and administration under public health, workmen's compensation, care for the indigent, maternal and child health care, Farm Security Administration and almost innumerable local organizations. Even though financial arrangements were often unsatisfactory, the medical profession insisted that the service should be under medical control and be kept up to professional standards. The difficulty in doing this suggests one reason for starting prepayment plans by a medical society. Political and lay prepayment plans fix their income by what taxation will be borne or what subscribers will pay, and then cut the service to fit the available

cash, usually also cutting the physicians' income below what will maintain standards while nearly always promising a "complete medical service", depending upon the incapacity of patients to judge the service to get away with the deception.

Whenever the administration and standards of any phase of medical care have been entrusted to politicians or persons untrained in medical science and art, or wherever financial management has encroached upon the control of medical service that service has deteriorated and the sick have suffered. This was true of public health, of institutions for the mentally diseased, and of whole nations under compulsory sickness insurance.

Medical society prepayment plans dare not deceive the public. They must meet equally the difficult problem of determining just what premiums can be collected and then just what service can be given for these premiums and finally just how this relation can be fully and honestly explained to the subscribers. Because this is but one of many hard problems of an honest effort to conduct a prepayment plan there have been many experiments, some of which failed, and numerous first mistakes to correct, so that some have grown fainthearted in the fight to organize and conduct such plans.

Yet in a short time about 600,000 persons have received the medical protection of these plans and the number of plans and subscribers grows daily. So greatly do prepayment plans giving an honest medical service change the desire and demand for medical care that figures based on plans with a fixed premium and more or less secretly restricted service furnish little useful acturial information. Only experiments with medical society service prepayment plans can determine just what services can be honestly promised and then actually given when the medical care is maintained at the high professional standards demanded in medical society plans.

Today much experimenting has been done by plans now in operation and many of the facts required both for successful financial operation and satisfactory service to subscribers have been determined. It is now a question of development during the short time that the road is still open for choice between political or lay controlled plans, and those in which medical standards are established and maintained, as they always have been established and maintained by the medical profession. Medicine still has a chance to choose, but that chance is disappearing.

Events in nearly all the countries involved in this global war have forecast extensive social changes when the eagerly awaited peace arrives. Medical arrangements will not be isolated from those changes nor can organized medicine remain indifferent to them without risking the achievements of many centuries. Moreover, since medicine is the social trustee of public health it can reject this opportunity and duty only by betraying that trusteeship.

A. M. SIMONS*

*Mr. Simons is Assistant Director of the Bureau of Medical Economics of the American Medical Association.

Floral Eponym

The lovely gardenia, Gardenia Jasminoides, is named after Dr. Alexander Garden (1728-1792) of Charleston, S. C. He was a successful practioner of medicine and an enthusiastic botanist. His letter to John Batram is often quoted, "Think that I am here, confined to the sandy streets of Charleston where the ox, where the ass, and where men, as stupid as either, fill up the vacant space, while you range the green fields of Florida," it was John Ellis, the botanist, who named the beautiful Cape Jessamine "Gardenia" in his honor.

SYMPOSIUM ON THE SULFONAMIDES*

INTERROGATOR: WILLIAM H. HIGGINS, M.D.

DISCUSSIONISTS

WYNDHAM B. BLANTON, M.D.
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HOWARD MASTERS, M.D.
O. B. DARDEN, M.D.

HOW ARE THE SULFONAMIDES USED IN THE TREATMENT OF PNEUMONIA AND WHEN IS SERUM THERAPY THE TREATMENT OF CHOICE? CAN THEY BE USED TOGETHER?

DR. BLANTON: With all that you know about pneumonia it is perhaps a *cliché* to begin by saying that chemotherapy is highly effective in the treatment of the disease. The preserum mortality was around 25 per cent. Serum halved it. The sulfonamides quartered it. Our Pneumonia Commission's figures for Virginia for the last two years show among 395 drug treated cases a fatality of 6.6 per cent.

The sulfonamides useful in the treatment of pneumonia are sulfanilamide, sulfapyridine, sulfathiazole, sulfadiazine. The pneumonias we are interested in are caused by the pneumococcus, Streptococcus hemolyticus, staphylococcus aureus, influenza bacillus, and Friedlander's bacillus. In pneumococcus pneumonia sulfapyridine, sulfathiazole, and sulfadiazine are all effective. Since sulfadiazine is the least toxic, it is the drug of choice. In Streptococcus hemolyticus pneumonia sulfanilamide, sulfathiazole, and sulfadiazine are all effective. Again on account of low toxicity sulfadiazine is the drug of choice. In Staphylococcus aureus pneumonia either sulfathiazole or sulfadiazine is good. In influenza bacillus pneumonia both sulfapyridine and sulfathiazole are used. In Friedlander's bacillus pneumonia type A sulfadiazine is used and in type B sulfapyridine is used plus specific antisera.

After diagnosis of pneumonia is made, in the average case one should proceed as follows:

1. Collect all specimens for laboratory examination (especially sputum) before giving the drug.
2. Give 4 gm of sulfadiazine immediately.
3. Follow with 1 gm every four hours until temperature is normal for 72 hours.
4. Change to a better drug if bacteriologic studies indicate.
5. If in 48 hours there is no improvement, consider stopping the drug.
6. Switch to a specific antiserum if drug proves too toxic.
7. Give specific antiserum in addition to the drug when
   a. a bacteremia fails to respond in 36 hours.
   b. more than one lobe is involved.
   c. pregnant.
   d. over 50 years old.
   e. seen late in disease (after 3 days).

Sulfonamide therapy in pneumonia can fail. Success depends upon an awareness of what may go wrong; for example, (1) low blood and tissue levels (from poor absorption or rapid elimination), (2) sensitivity of the patient (exhibited in skin, blood, nervous system, fever, and vomiting, etc.), (3) crystallization in the kidney (with anuria and hematuria), and (4) an etiologic organism not affected by the sulfonamides.

It is not enough to give initially 4 grams of sulfadiazine followed by 1 gram every four hours until

*A meeting of the Richmond Academy of Medicine held September 22, 1942, was devoted entirely to a discussion of the sulfonamides as they are employed in the various fields of medicine. Dr. William H. Higgins acted as the interrogator and a number of specialists discussed the questions as they were propounded.

the temperature is normal in every case of suspected pneumonia. Accurate bacteriologic diagnosis, constant observation of the patient, meticulous attention to the blood count, cultures, and drug levels, as well as repeated studies of the urine are essential to success.

Of What Value Are the Sulfonamides In Meningitis, Including Tubercular Meningitis?

Dr. Stern: In discussing the topic: Of what value are the sulfonamides in meningitis, including tubercular in children, it seems most practical to cite my present beliefs based on a modest experience and some study of the literature. For brevity, authorities and publications are not formally quoted.

When a lumbar tap is done on a child, on proper indications, and reveals a fluid which suggests meningitis, there is usually some time lost till the exact causative organism or strain is identified. It is relatively safe and good medical practice to inaugurate sulfonamide therapy in order to attack the process as soon as possible. For this purpose, sulfanilamide, sulfapyridine, and sulfadiazine are all useful, sulfathiazole much less so because it is not as diffusible and hence its concentration in the spinal fluid is much less in relation to the blood. Some does get in the central nervous system though, in spite of earlier reports to the contrary. There is very variable testimony as to the relative concentrations of the other three in the spinal fluid and blood. A concensus seems to be 20-30% for sulfanilamide; 50% for pyridine, and up to 80-100% for diazine. These percentages are still open to question.

In cerebro-spinal meningitis, conservative clinicians choose the weapons of the sulfonamide plus the serum or antitoxin or both—with spinal taps as indicated for intrathecal therapy, etc. More advanced, not to say radical, authorities are content to tap only once for diagnosis. They then give the sulfonamide per os, intravenously or subcutaneously and do completely without specific sera. Recovery rates are equally good. The dosage is from 1½ to 3½ gr. per pound of body weight per 24 hours. This is reduced as the patient improves and discontinued 48 hours after fever is gone or the spinal fluid is sterile or the count is satisfactory.

The same general procedure is used in the secondary or so-called purulent meningitis.

In influenzal infection use sulfapyridine or diazine with "B" type horse or beta rabbit serum intrathecally. Human or guinea pig complement adds to the effectiveness.

In streptococcic cases—sulfanilamide or diazine.

In pneumococcic cases—sulfapyridine or diazine, with occasional help of specifically typed sera and intrathecally the sodium salt of hydroxylethylapocuprein hydrochloride, (℞71) for short.

Staphylococcic meningitis is not materially affected by the sulfonamides. Diazine may be used with ℞71 intrathecally and staphylococcic antitoxin intravenously.

The rarer organisms, typhoid, gonococcus, salmonella groups, B coli, etc., have had no significant series reported but many isolated cases have recovered and the sulfonamides are indicated.

The drop in red cells and hemoglobin which results from intensive sulfonamide therapy can be met by transfusions. Oddly enough, leucopenia and agranulocytosis have not been of common occurrence. Because of the practical difficulties in administration of the drug in infants, a valuable paper has just been published. It has been possible without untoward reactions locally to give 27 infants 50 injections subcutaneously of 5% sodium sulfadiazine in distilled water and secure thereby excellent, prompt and well maintained sulfa blood levels. Since these little patients present difficult veins and stomachs this overcomes a common handicap to sufficiently thorough treatment.

Promin has been used in tubercular meningitis but still belongs in the one case class of remedies. It is worth trying with such a desperate prognosis.

The snags encountered in heavy sulfonamide therapy have been poor tolerance (diazine seems best), heavy crystals in urine (in one case causing almost an anuria), and severe nephritis in which complicating infections may have been as much an etiological factor as the drug. A case was reported with 25 mgm. concentration in the spinal fluid, without appreciable damage to the patient.

Can X-Ray Therapy Be Given With Safety When the Sulfonamides are Being Used—(a) Locally? (b) Generally?

Dr. Tabb: The question as to whether X-ray therapy can be given with safety during the administration of the sulfonamides cannot be answered definitely at the present time. There is very little

to be found in the literature on this subject. Kelly of Omaha, Nebraska, who is a great advocate of X-ray therapy in peritonitis and gas gangrene, does not use the combination of these two curative agents, but invariably postpones X-ray treatment for twenty-four hours after the withdrawal of the drug and he seems to feel that, even when this is done, the patients do not derive the usual beneficial effects as those to whom the drug has not been administered at all.

M. B. Marks of Miami Beach, Florida, reported two children both with septic sore throats and cervical glandular enlargements whom he feels reacted rather violently to X-ray therapy to the glands. It seems to be his impression that these children would not have had the severe swelling of the glands and fever that they did, had the X-ray treatment been used alone. He cites Epstein as having demonstrated that the skin of people under sulfanilamide is more sensitive to ultra-violet rays.

One dermatologist whom I consulted does not hesitate to use 85KV unfiltered therapy to the skin in connection with the sulfonamide ointments or the usual oral administration. One roentgenologist sees no reason why such lesions as carbuncles, boils, etc., should not be treated while patient is under these drugs. Another roentgenologist is still skeptical of the combination. He has given X-ray therapy eight hours following the administration of the drug, but admits that the serious condition of the patient warranted taking any reasonable chance. Another roentgenologist feels that he would not prefer to administer X-ray therapy in connection with the sulfonamides until further definite data is available. It is my impression that most roentgenologists would be somewhat doubtful at the present time of the advisability of delivering as much as 200 R units with heavy filtration of say 2 mm of copper to the abdomen of a patient whose blood was saturated with one of these drugs.

What Inspiratory Infections (Common Cold Included) Are Amenable to Sulfonamide Therapy? What is the Index for Determining the Use of the Drug in Such Conditions?

Dr. Beach: There have appeared in recent months several articles from institutions giving the results of their experiments in regard to the sulfonamide drugs in the treatment of the above conditions. These results are apparently encouraging, but with the available literature at hand at the present time I feel that their use in such conditions is definitely contraindicated and for the following reasons:

1. These drugs, as we all know, are not without danger and I do not feel that we are justified in giving the patient such a drug for a condition which is as mild and self-limiting as the above.
2. Practically all of these patients are treated at home and this makes laboratory check-ups impracticable; some few don't even stop work.
3. There is a possibility of sensitizing the patients to these drugs and when they are definitely indicated the patient is unable to take them.

Why Are the Sulfonamides of no Value in Treating a Certain Small Percentage of Cases of Gonorrhea? Is There a Local Treatment? How Does the Drug Effect a Cure, Particularly in the "One Day" Treatment?

Dr. Washington: This question has never been answered except by theory. My idea is that just as there are many strains of the streptococcus, there are also many varieties of the gonococcus. We know that certain strains of the streptococcus are killed by the sulfonamides while other strains, notably the streptococcus fecalis and viridans are resistant to the drug. I believe the effect on the gonococcus is similar. This could explain why sulfanilamide lost its efficacy in gonorrhea. Due to its widespread use in this disease it could have killed out certain strains of the germ and left resistant strains for propagation. Fortunately however, sulfathiazole continues to be effective in about 90 per cent of the cases of this disease.

So far as I know the sulfonamides have never been used locally in gonorrheal urethritis. There is one point I should like to make, though it might seem a digression, in regard to the use of local treatment. It is very foolish to push the use of the sulfonamides, switching from one to another and hoping for good results, when all the time the patient is not improving. This patient has a sulfonamide resistant infection and usually has prostatitis or some other complication. The drug should be discontinued and prostatic massage and other

suitable local treatment instituted.

The sulfonamides work both through the blood stream and in the urine to produce a cure.

The newspapers recently carried an article headed "Gonorrhea Cured in One Day," or words to that effect. The basis for this was an article by Captain J. P. Pappas in the June issue of the "Military Surgeon". The author gave one massive dose 5 to 7 grams, of sulfathiazole to a small series of patients and reported 82 per cent cures. These patients were well in an average of 5 days and remained well. The only reaction was transient nausea.

I feel that this is a valuable contribution, but the newspaper publicity given it could very well serve to minimize in the lay mind the danger of venereal disease.

What Are the Uses of Sulfonamide in the Treatment of Influenza

DR. CHAPMAN: In the past many etiological factors have been considered the cause of epidemic influenza. There is no doubt at the present time as to the cause of influenza, and an etiological diagnosis is possible.

The relation of a specific filtrable virus seems clearly established for at least one form of epidemic influenza. The virus can be isolated by spraying washings of the nasopharynx into the nares of ferrets, from which the true strain can be obtained. It has also been possible to culture the virus from the membranes of the chick embryo, which serves for its primary isolation. It is thus different from the virus of the common cold, which apparently will not develop under these conditions. The virus of epidemic influenza is rarely encountered in sporadic cases and there are various types of this virus.

In sporadic outbreaks, it is often difficult to identify the disease as influenza. Respiratory diseases of all types, and even some non-respiratory diseases have been loosely called influenza, most commonly the "flu", which seems to cover a wide variety of clinical forms, including the common cold in both epidemic and sporadic forms. Such terms as grippe, intestinal grippe, and so-called Devil's grippe have been used since the epidemic of 1918 to cover a multitude of minor infections which have no relation to virus influenza.

I am sure a great variety of such disorders have been treated with the sulfonamides for influenza, and naturally the results have been variable.

The sulfonamides have not proven of value in virus borne diseases and therefore have no place in the treatment of epidemic influenza.

In the treatment of the sequelae due to secondary invaders following epidemic influenza, the sulfonamides are of greatest importance, and offer the only hope of recovery in the majority of cases of influenza meningitis which is caused by the influenza group of organisms.

What Are the Uses of the Sulfonamides in Ear Infections and Mastoiditis?

DR. PASTORE: To thoroughly understand the results of sulfonamide therapy in middle ear and mastoid infections it is necessary to bear in mind two important factors, (1) the anatomical and structural elements involved and (2) sulfonamide therapy is not as effective in inflammatory bone lesions as in soft tissue.

In summary: (1) Sulfonamide therapy in ear and mastoid infections is most useful when used during the invasive stage of the infection. It is least useful in the suppurative stage and when thrombophlebitis is associated with the original focus of infection.

(2) Personal experience and a partial review of the more recent otological literature tend to favor sulfadiazine as the drug of choice. Sulfathiazole, sulfanilamide and sulfapyradine are used depending on the type of infection predominating and the experience of the individual physician.

(3) It is important that the dosage of the drug be adequate in the early stages of the disease. As a rule it is desirable to maintain a blood level of the drug between ten and twenty mg. per cent. The severity of the infection and the patient's course serve as an index in determining the point at which the blood level should be maintained.

Effect on specific conditions:

(1) Sulfonamides are most useful where cellulitis or erysipelas is associated with external otitis.

(2) The constant draining ear is resistant to sulfonamide therapy particularly those in the type three and type four class.[1] This is as would be expected.

(3) Acute otitis media due to the organisms streptococcus hemolyticus or pneumococcus type three

responds very well to sulfonamide therapy in the very acute stage.

(4) Every case of acute otitis media is a potential case of mastoiditis (except where complete mastoidectomy has previously been performed), therefore one cannot say how often an early mastoiditis is aborted by the use of the sulfonamides. However, if adequate sulfonamide therapy is instituted before the third day of acute mastoiditis the result is uniformly good. When the disease has been present for more than a week before the sulfonamides are administered, resolution of the disease is less likely as each day passes before initiation of the drug.

During the first six months of 1942, nineteen mastoid operations were performed in the Medical College of Virginia Hospitals. Five of the nineteen patients had received inadequate sulfonamide therapy before admission but none before complications of mastoiditis were manifest. In only one of the nineteen patients was the disease limited to the middle ear and mastoid bone. The remaining eighteen all had one or more complications of mastoiditis on admission.

REFERENCE

(1) Lillie Classification.

HOW SHOULD THE DRUG BE USED IN PATIENTS WITH KNOWN RENAL IMPAIRMENT? IS THERE APT TO BE GREATER INCIDENCE OF RENAL CALCULI DUE TO THE USE OF THESE DRUGS? WHAT IS THE DRUG OF CHOICE IN THE TREATMENT OF CHRONIC URINARY TRACT INFECTION?

DR. DODSON: Renal function tests should be done to determine as accurately as possible the degree of renal damage. The dose of the drug should be reduced depending upon the functional capacity of the kidney and when possible daily determinations of the blood level of the drug should be done. When the function of the kidneys is impaired the drug is not readily eliminated and a toxic amount may accumulate in the blood stream.

The concretions formed by crystalline deposits of the drug are not true calculi. If the patient survives they pass again into solution and cause no demonstrable injury to the kidney. I had a patient recently treated for anuria resulting from sulfathiazole crystals who had normal renal function and normal excretory pyelograms a few weeks following his illness.

The drug of choice depends somewhat upon the type of organism causing the infection. Infection caused by the Bacillus coli group of organisms is effectively treated by sulfanilamide, sulfathiazole, or sulfacetamide. Sulfacetamide is somewhat less toxic in my experience, consequently it is preferred. Sulfanilamide and sulfathiazole are the only chemotherapeutic agents effective in the treatment of infections caused by the Bacillus proteus. Sulfathiazole is less toxic than sulfanilamide to most patients. Staphylococcic infections respond better to sulfathiazole than to any other drug. The streptococcic infections, except those caused by the streptococcus foecalis, respond better to sulfanilamide. The streptococcus foecalis is not affected by these drugs. For practical purposes when bacteriological studies are not convenient, sulfacetamide will be found quite effective in the treatment of infection with acid urine. The colon group of organisms predominate when the urine is acid. When the urine is alkaline the organisms are apt to be staphylococci or proteus bacilli and sulfathiazole is the drug of choice.

WHAT IS THE PRESENT STATUS OF THE USE OF SULFONAMIDES IN GASTRO-INTESTINAL INFECTIONS? ARE THE BENEFITS IN RELATION TO THE CONCENTRATION IN THE BLOOD OR TO THE DIRECT ACTION OF THE DRUG?

DR. DAVIS: A number of articles have appeared recently by Lyon and by Marshall and his coworkers on the use of sulfonamides in bacillary dysentery. These have dealt with sulfaguanidine and results have seemed to be encouraging but my experience in a few cases has not been satisfactory. A recent report on the use of sulfathiazole would seem to be more promising as I feel that the absorbable drug stands a better chance to get at the organisms in the mucosa.

The drugs have been extensively tried in nonspecific ulcerative colitis with variable results. My personal experience leads me to feel that they are helpful to quiet down the acute flare up in which secondary infection seems to be a large factor. In the chronic stage the drug appears to be useless.

Typhoid fever is not influenced favorably by any of the varieties of sulfonamides and it has been

suggested that these cases may be made worse. Amebic dysentery is not helped.

Recent reports suggest that the organism of Asiatic cholera may be influenced in vitro but reports of its clinical use have not come to my attention.

Acute diverticulitis of the colon may be favorably influenced by the absorbable forms but attempts to treat acute appendicitis with these drugs should be condemned. They have no effect in peptic ulcer.

In answer to the second part of my question, I believe that the slightly absorbable sulfaguanidine or sulfasuxidine should be used when the aim is to influence the bacterial flora of the intestinal content, but when infection in the bowel wall is to be dealt with the absorbable forms which give a satisfactory blood concentration should be used.

What Are the Uses of the Drugs in Empyema? In Peritonitis Locally and Systemically? Rate of Absorption From the Peritoneum? Has Sulfasuxidine Been Used Intraperitoneally?

DR. DANIEL: In order to cover so many questions in the four minutes allotted me I will attempt to answer them together. The complications of pneumonia and consequently the incidence of post pneumonic empyema have apparently been decidedly decreased since the advent of sulfonamide therapy. Sulfathiazole has been used with favorable results in certain types of coccal empyema when used topically. Here it must be noted that the rate of absorption of the sulfonamides varies considerably when used in exudative areas, such as abscess cavities, as compared with noninfected or very recently contaminated areas, such as clean peritoneal cavities or freshly contaminated wounds.

Haag et al of the Medical College of Virginia have very beautifully shown by canine experiments the absorptive rate and comparison of the absorption of sulfanilamide and sulfathiazole. When doses of 100 mgm. per kilo were administered by mouth, by peritoneum, and by pleura, the peak of absorption occurred in one to two hours; the sulfathiazole peak occurred in two hours with 3 to 5 mgm. per cent blood concentration and sulfanilamide's peak occurred in one hour. With both drugs the pleural route absorption was slightly faster. With both drugs the blood concentrations gradually decreased to disappear in 24 hours. Of course, these experiments were with dogs, but clinically the results have apparently been confirmed.

We have used both sulfanilamide and sulfathiazole both locally and systemically in peritonitis. The maximum adult dose of 9 gms is applied locally and the blood determination obtained the following day if further administration is desired. Sodium sulfathiazole intravenously may be given after calculations made. In abscess cavities the absorption of the drugs will be very slight. When used locally exudate from appendiceal cavities may show 200 mgm. per cent and the blood concentration very slight.

I know of no case where sulfasuxidine has been used in the peritoneal cavity. Sulfasuxidine has supplanted sulfaguanidine as an intestinal antiseptic and particularly as a preoperative adjunct for intestinal surgery. There is very little absorption from the intestinal tract and subsequently practically no toxicity. The usual gram dose every four hours may be given many days with no ill result. Experiments have been reported where the bacterial count in one gram of fecal matter has been reduced from ten million to 100 after several days of oral four-hour gram doses of sulfasuxidine preoperatively in resection of the colon for carcinoma; but we must not forget that even before its use, it was a rare occurrence to have an infection following primary resection of the colon.

What Are the Specific Values of the Various Sulfonamide Ointments and Solutions Now On the Market? Is the Drug Used Internally in Dermatologic Practice?

DR. MURRELL: A large percentage of cases coming to a dermatologist consist of irritations secondarily infected. Necessarily the infection is the first concern and the ideal remedy will be an antisepic with no tendency to irritate. Practically all of the older antiseptics are irritants and add to the dermatitis. This is true, only in a small degree with the sulfonamides locally applied and constitute their chief usefulness.

The efficiency of the sulfonamides, particularly sulfathiazole, as a local antiseptic has been amply proven in the recent work of Pillsbury, Dennie and others. There is some difference of opinion as to the best base to use, some feeling that a grease base is an interference and using special bases which

are disappearing. The best dosage is also still undetermined but a general average, as far as sulfathiazole is concerned, is 5 per cent ointment which has proven efficacious.

WHAT ARE THE ALLERGIC FACTORS IN SULFONAMIDE THERAPY?

DR. VAUGHAN: Drug allergens can produce practically any of the common allergic manifestations. Some drugs appear to have a tendency to produce one or another more freqently. Aspirin for example is especially likely to cause asthma, urticaria or angioneurotic edema. Barbiturates frequently cause morbilliform or purpuric eruptions. The characteristic allergic skin reaction to digitalis is with a scarlatiniform rash. Arsenic compounds, especially the arsphenamines, are prone to cause exfoliative dermatitis. Granulopenia is characteristic of aminopyrine sensitization. Fever is a characteristic at one time or another of all drug sensitizations and it is this symptom in particular which separates drug allergy from food and inhalant allergy.

The sulfonamides can produce any of the above allergic symptoms. Here again fever is an outstanding reaction because the sulfonamide drugs are customarily used in the treatment of febrile diseases and drug fever may be overlooked or confused with fever due to the existing infection.

The sulfonamide group of drugs represents one of the outstanding advances of medicine. It is unfortunate that sensitization to these drugs occurs so frequently. Fifteen per cent of those receiving sulfanilamide and 33 per cent of those receiving sulfathiazole become sensitized. It makes no difference whether the drug is given continuously over a long period or whether it is given intermittently. Sulfadiazine produces sensitization. So far it appears to be less highly allergenic than the other two but it should be borne in mind that we have not used it as long.

Sensitization to one of these drugs may remain specific for that drug or may result in sensitization to several or to all. One recent case for example, developed allergic intolerance to sulfanilamide, sulfathiazole and sulfadiazine but was able to take sulfapyridine.

There are no reliable tests for determining sensitization. Patch tests, scratch tests, endermal, passive transfer and precipitin tests are of no value. Even the history is of no help. A person with no previous history of allergy appears to be just as likely to develop sensitization as one with a strong allergic history. The best that one can do is to watch for signs of intolerance during medication. These are especially the recurrence or exaggeration of fever, leukopenia and cutaneous manifestations. In the presence of these symptoms it is best to discontinue the drug for a time. If it appears the drug is still needed, one of the other preparations should be tried. Sulfadiazine will probably be less likely to cause allergic symptoms. Sulfathiazole which at present appears to be the most generally useful of these drugs, unfortunately produces the highest incidence of sensitization and there is evidence suggesting that it is more likely to cause polyvalent sensitization than the others.

There is no evidence at present that other drugs given with the sulfonamides predispose to sensitization to the latter. In other words there is no contraindication to the use of other drugs as far as allergy is concerned.

The sulfonamides are such valuable drugs that they should not be used except when their need is clearly and urgently indicated, because they are always administered with the possibility of consequent sensitization which may prohibit their subsequent use. Don't use these drugs for ordinary head colds, tonsillitis, and other illnesses which can be treated equally well by other measures. Save them for the real emergency.

This is true even within the field of allergy. We have no hesitancy in giving sulfonamides in the treatment of status asthmaticus, where it is often a question of life and death, and especially when status asthmaticus is accompanied by fever or the sputum shows coccic infection but we would not use these drugs in the treatment of recurrent severe asthma even in the presence of bronchial tree infection but without status asthmaticus. Such a procedure would entail frequent and repeated use and would probably ultimately lead to sensitization.

WHAT IS THE COMPARATIVE ACUTE TOXICITY OF THE VARIOUS SULFONAMIDES AND THEIR SALTS?

DR. HAAG: It is not always possible to correlate definitely the toxicities of the various sulfonamides as noted clinically, with the findings of the pharmacological laboratory. For instance, when free

sulfapyridine is given by mouth to mice it is, at least on occasion, very much less acutely toxic than sulfanilamide similarly administered, this being due to faulty absorption of the sulfapyridine. Taking the findings in the literature by and large however, and with due consideration being given the several factors involved, it appears that of the four sulfonamides, namely, sulfanilamide, sulfathiazole, sulfapyridine, and sulfadiazine, sulfanilamide is the least toxic and sulfapyridine the most toxic, the other two coming between, with sulfadiazine probably being less toxic than sulfathiazole. These figures are based largely on lethal dose estimations. It is well to point out, however, that tendencies to produce untoward side reactions on prolonged administration do not always correlate with the relative acute toxicities of the several compounds. For instance, experimentally sulfanilamide is much more prone to produce anemia than either sulfathiazole or sulfapyridine; on the other hand, these latter two compounds have a tendency to produce kidney stones.

The studies thus far reported indicate that by oral administration the sodium salts of sulfapyridine and sulfathiazole are much more toxic than the free acids. The same probably holds for sulfadiazine. This is due to the prompt absorption of the salts from the gastrointestinal tract. By vein one would not expect much difference in toxicity.

Sulfaguanidine and sulfasuxidine both have a low oral toxicity; much lower than any of the compounds mentioned above. In the case of sulfaguanidine this is due, not so much to poor absorption from the gastrointestinal tract, but to very prompt elimination by way of the kidneys after absorption. With sulfasuxidine the low toxicity is due to poor absorption.

In regards to tissue damage on local application of these drugs, the consensus of opinion seems to be that generally there is little to fear. The sodium salts are irritating to the subcutaneous tissue due to their alkalinity. They might likewise be irritating to mucous membranes if used in too high a concentration or for too long a period of time. Recently it has been shown that sulfathiazole is definitely irritating to nervous tissue and that sulfanilamide may damage fatty tissues on local application.

Of more than passing interest are experiments that have recently been published showing that diets high in protein tend to protect laboratory animals against damage by some of the sulfonamides.

What Are the Indications and Contraindications of the Sulfonamides in Ophthalmology?

DR. THOMASON: Locally the sulfonamides have been of value (1) in the treatment of lacerated wounds of lids; (2) Streptococcic conjunctivitis; (3) Pneumococcic conjunctivitis; (4) Corneal ulcers of pneumococcic origin and (5) infections of the lids.

For pneumococcic and staphylococcic infections of the conjunctiva and the cornea, powdered sulfathiazole probably gives the best results. It causes some pain, therefore the eye should be anesthetized previous to dusting the powder into the eye.

A 5 per cent sulfathiazole ointment is recommended in the treatment of perifolliculitis, blepharitis squamosa and blepharitis ulcerosa.

In gonococcic conjunctivitis, the use of sulfapyridine was found to give the best results, but since this drug is not as well tolerated as sulfathiazole the latter is the drug of choice. The drug must be given internally in rather large doses and is continued until three negative smears are obtained, unless toxic symptoms appear.

Thygerson reports that sulfanilamide by mouth along with 5 per cent sulfathiazole ointment locally is quite effective in the treatment of inclusion conjunctivitis.

In intraocular infections sulfathiazole is contraindicated due to its low concentration in the eye, and sulfanilamide is the drug of choice.

What Value Is Sulfonamide Therapy in the Treatment of Sinusitis?

DR. GATEWOOD: It is understood that the particular sulfonamide drug used must conform to the sinus bacteriology.

Acute fulminating sinusitis is often helped by internal administration of sulfonamides. If the disease is an acute flare-up of an old process the results are poor.

When complications of severe sinusitis are impending, such as meningitis, septicemia, osteomyelitis

or brain abscess, large doses of sulfonamides internally are extremely helpful.

Uncomplicated chronic sinusitis is rarely benefited by the internal use of the drugs. Considerable use has been made of suspension injections (20 per cent) into the sinus cavity with definite improvement. Insufflation of the powders daily for a while after a window resection of the naso-antral wall is practiced with good results, when the pathology is not too grossly involved.

Local use (Prostz method) of saturated solution of sulfanilamide for ethmoiditis, especially in children, is favored by many rhinologist.

The use of 5 per cent sodium sulfathiazole spray has proved to be more harmful than helpful, because of its strong alkaline (ph 11) effect upon the ciliated epithelium. The normal nasal secretions have a ph of 6.5.

On the whole sulfonamides are much more effective in curing lesions during the period of invasion, than they are in relieving established lesions.

Of What Value Are the Sulfonamides in Typhoid Fever, Malaria, Malta, Typhus and Rocky Mountain Spotted Fevers? Is There Any Characteristic Pulse or Temperature in the So-Called Drug Fever?

DR. WALKER: The sulfonamides are of no value in the treatment of typhoid fever; in fact when given empirically, before the diagnosis is made, much harm may be done in that they not infrequently cause an elevation in the white blood count and produce gastro-intestinal tract symptoms, both of which tend to mask the usual clinical picture and for that reason not infrequently cause the true nature of the disease to be overlooked during the early stage.

The drug is useless as a therapeutic agent in malaria, Rocky Mountain spotted and typhus fevers. In Malta fever, sulfanilamide at one time was thought to be distinctly beneficial. More recent reports have cast much doubt as to its usefulness. At present sulfapyridine is thought to be of more value. This drug, however, is not specific and most clinicians recommend that if it is to be used, it be given in conjunction with immune serum.

The most important clinical feature of so-called drug fever is the fact that the patient does not look as ill as the chart would indicate. The pulse, as a rule, is slow in proportion to the fever.

What Are the Uses of the Sulfonamides in the Treatment of Burns?

DR. EVANS: The sulfonamides have been used extensively in burns in the past year. The principal methods for the local use of sulfonamides are:

(1) Sulfadiazine spray (Pickrell). By this method sulfadiazine is dissolved in a tri-ethanol amine solution and sprayed on the burn surface until an eschar is formed. Recently methyl cellulose has been added to this preparation in an attempt to get a better protective coat. Very excellent results have been obtained with this preparation by Pickrell and others.

(2) At the Medical College of Virginia we have had rather extensive experience with 6% sulfanilamide ointment in a fatty base, having treated 79 cases of hospitalized burns with only one fatality. In our hands this has proved the method of choice in the treatment of burns. Its advantages are the simplicity of treatment, few personnel needed, low cost, and its ready adaptability to the treatment of mass burns as will be seen in military surgical practice. Plasma loss is no greater with this method than when an eschar is obtained by the use of tannic acid. Contractures are not seen if early physiotherapy is given; serious infection has not been encountered in this series and scar formation is minimal.

Other workers are using sulfathiazole or sulfanilamide-sulfathiazole mixtures, usually in the 10% concentration and usually in a water dispersible base. Care must be taken when these preparations are used on a large burn surface because of the ready absorption of the sulfonamides from a water dispersible base.

(3) Sulfanilamide powder has been used on burn surfaces. This practice has been discontinued because of the toxic levels of sulfanilamide obtained in the blood stream due to its ready absorption from the burn surface.

Many persons treating burns have given sulfanilamide or sulfathiazole by mouth for the first week or so after the burn patient is received. This is the practice of the armed forces. If sulfanilamide ointments are used locally it is likely that sulfanilamides need not be given by mouth.

What Are the Local Uses of the Sulfonamides in Orthopedics?

DR. TUCKER: The local use of the Sulfonamide

drugs was started at the Crippled Children's Hospital the latter part of 1938 with little knowledge of its local action and the tissue absorptive powers. Where large sequestra were removed, as much as 6 ounces was inserted and packed about the cavity. Never did we experience more than 3 mgr. per 100 cc. of blood concentration.

Of course, we were groping much in the dark at this time and have found that less amounts instilled into the wounds serve with equal effect. The crystal of Sulfanilamide is used with the greatest efficacy. All open wounds where the drug is used, should be closed effectively enough to prevent serum loss, either by tissue closure or by packing with vaseline gauze.

The Sulfonamides have no particular antiseptic reaction on the bacteria but are unlike the antiseptics in that they do no tissue damage, either to the cells or to the serum. The bacteriophage destroyed by antiseptics is not harmed by the local use of the Sulfa drugs. It is thought that it increases the quantity and potency of the bacteriophage present. The action of the drug is maximum when the concentration of the drug is high, therefore, forced systemic intake as well as local use, work together for the best end. Also, the amount of devitalizing tissue should be small, prompting thorough debridement of all open wounds. Likewise, the drug action is maximal when the bacteria is small, indicating early use of the drug when infection is suspicioned or when it is actually present.

All acute infections, particularly acute osteos, are treated non-surgically as far as practicable. Use Sulfanilamide where streptococcus is evident—Sulfathiazole where staphylococcus is the predominating bacteria in blood concentration as high as 15 mgr. per 100 cc.

What are the Uses of the Sulfonamides in Upper Respiratory Infections In Children?

DR. ANDERSON: The determining factors which help in deciding whether or not to use one of the sulfonamides in an upper respiratory infection in a child are best considered first. It is then fairly simple to judge specific cases by the rules laid down and choose the treatment accordingly.

These factors are; first, the intensity and progress of the infection when first seen; second, the probable etiological agent, whether virus or pyogenic bacterium; third, the location of the infection and arising out of this its potential seriousness either early or late; fourth, the natural course of the disease uninfluenced by a sulfonamide.

For example, judged by these rules a tonsillitis of three days' duration of only moderate severity in a reasonably vigorous child might well be allowed to run its course which will probably end in another day or two. If, however, there is considerable toxemia, the cervical glands are becoming tender and the process extending, the sulfa drug may well be used.

A laryngitis accompanied by a fair elevation of fever had best not be watched very long. The dreaded and highly fatal streptococcus laryngitis with or without tracheal and bronchial involvement is too serious a condition to gamble with.

Otitis media is potentially a serious condition although in the large majority of cases it is not. It is not likely to become rapidly and suddenly alarming as is laryngitis. Here we may be justified in watching the trend a few hours but if it is not definitely toward improvement within twenty-four hours the feeling among most pediatricians is that a sulfonamide should be given.

Always use an adequate dose in the beginning and once improvement starts reduce the dose gradually.

What Are the Earliest Signs of Kidney Damage Due to the Sulfonamides?

DR. POLE: Of the commonly used sulfonamides, sulfapyridine, sulfathiazole, and sulfadiazine are the ones most likely to cause kidney damage. Sulfanilamide rarely causes renal pathology. The appearance in the urine of crystals of the acetylated forms of the sulfonamides is always a sign of potential kidney damage. The appearance of microscopic or gross hematuria is nearly always an indication for immediate discontinuance of the drug. Abdominal cramps or even typical renal colic often occur as a result of partial obstruction of the upper urinary tract by sulfonamide crystals. Oliguria or anuria are signs of upper urinary tract obstruction and require emergency measures.

Detection of kidney damage can be made early in most cases by frequent microscopic examinations of the urine for blood and crystals and by accurately recording the patient's fluid intake and output.

WHAT ARE THE USES OF THE SULFONAMIDE DRUGS IN NERVOUS SYSTEM INFECTIONS?

DR. MASTERS: Of the sulfanilamide group, prontosil was first used in this country in the treatment of nervous diseases. This was administered by Dr. Ashley Weech in the Baby's Hospital, New York City, July 1935, in a child suffering from a meningeal infection. Since then the many derivatives have been tried out in various infections of the nervous system. Up to date meningitis due to the meningicoccus, pneumococcus, staphylococcus, influenza bacillus, bacillus coli acidi lactici, and bacillus coli communis have been susceptible to one or more of the derivatives. The sulfa drugs have not proven of value in any of the virus disorders but probably have some influence in encephalitis of the von Economo type where the virus is believed to be the symbiotic companion of the streptococcus. I personally observed a boy at the New York Neurological Institute who had polioencephalitis involving the cerebellum and right anterior tibial group, who was treated with sulfanilimide; his infection disappeared after a few days, leaving him with partial paralysis.

The drugs most commonly used are sulfanilamide, sulfapyridine, sulfathiazole, and sulfadiazine. In his study of the results of treatment of pneumococcal pneumonia with sulfonamides, Dowling discovered that sulfadiazine was the least toxic, sulfathiazole the next less toxic, with sulfapyridine giving the highest percentage of toxicity in a group of 644 patients; also that the mortality was lower with the use of sulfadiazine. There was only 3% variation compared with the other drugs.

In the choice of drugs in the treatment of the meningitides therefore it is well to select the least toxic drug and at the same time the one which has the greatest penetration into the cerebrospinal fluid. Sulfapyridine, sulfanilamide, and sulfadiazine are said to be absorbed well.

The sodium salt of sulfapyridine and sulfadiazine may be given intravenously at the rate of 1/10 gram per kilogram of body weight (6 to 9 grams for the initial dose). A 5% solution may be used for the initial dose in distilled water, or a 2% solution in physiologic sodium chloride solution. When given by mouth the average daily dose should range around 4 grams of sulfapyridine or 6 grams of sulfadiazine given in divided doses at intervals of six or eight hours. Increase or decrease in the amount given will depend entirely upon the spinal fluid level estimated daily, and which should be kept at 4 mgm.% or more. Sodium sulfapyridine may be used intraspinally in a 2% solution in doses of 10 to 15 cc. following spinal drainage. The use of antimeningococcic or antipneumococcic serums, etc., are advocated by some. They are certainly to be considered in the fulminating cases where the sulfa therapy seems not to have the desired effect in the first forty-eight hours. Intravenous doses of antipneumococcic serum from 100,000 to 200,000 units as an initial injection are used, and daily doses of 10,000 to 20,000 units given intraspinally in cases of pneumococcic septicemia. From 50 to 100 cc. of antimeningococcic serum may be given intravenously depending upon the severity of the illness; proportionate amounts may be given daily by the intraspinal route. In cases of pneumococcic meningitis accompanying middle ear, mastoid, and sinus disease surgical intervention may be necessary. It is usually best that the patient have at least twenty-four hours of adequate chemotherapy or serum treatment before such procedure is undertaken.

When should change in chemotherapy take place? If the blood and fluid level standard for the particular preparation can not be maintained then change should be made or when evidence of marked toxic reaction takes place. The sulfa drugs should be continued until complete clinical and bacteriological recovery is reached unless toxic symptoms interfere. Chemotherapy in meningococcic meningitis takes from 2 to 5 days; pneumococcic meningitis 7 to 14 days; staphylococcic meningitis 2 to 3 weeks; streptococcic meningitis 7 to 14 days; and in other forms from 1 to 3 weeks to bring about bacterial recovery. If acute hemolytic anemia occurs blood transfusions should be given, and other supportive treatment added.

Very thorough reports on meningitis have been made by Dowling in the December 1941 issue of the Medical Annals of the District of Columbia; by Wm. D. Stubenbord in the December 1941 issue of the Medical Record; and a most exhaustive study of meningococcic meningitis by Dingle and Finland in the January 1942 issue of War Medicine. Little, in the June 6, 1942, issue of the J. A. M. A. reported on the nervous and mental effects of the sulfonamides, all of which I recommend to you for survey.

WHAT ARE THE MENTAL SYMPTOMS ASSOCIATED WITH SULFONAMIDE THERAPY? PRECAUTIONS?

DR. DARDEN: Since the use of the sulfonamides has become widespread medical literature reveals many instances of psychoses apparently precipitated by one or another of the drugs. The reports are not of the mild states of confusion, delirium, and changed moods of the patients; but they portray those graver mental disorders requiring special attention. Because of the usually rapid recovery from the acute condition, transfer of the patient to a mental hospital is generally unnecessary. Though mental symptoms usually occur during administration, they may appear after withdrawal of the drug.

The psychic manifestations sometimes apparently caused by sulfa-drugs are inconstant, ranging from an uncooperative, negativistic attitude to a condition necessitating complete restraint. Delusions, hallucinations and confusion are prominent symptoms. There is often a persecutory trend with fear tendencies. Even the ambulatory patient may be so profoundly impaired in judgment as to jeopardize his own life and the safety of others. The varying state of the mental content leads to the tentative conclusion that the picture is not characteristic of the causative agent but rather dependent upon the patient's personality make-up.

The fundamental factors liberating the psychic symptoms are not yet understood. The mental disturbance is not dependent upon the blood concentration of the drug. It is interesting to note that in some instances the psychic disturbance has followed withdrawal of the drug in a manner similar to a toxic, mental reaction consequent upon the sudden withdrawal of morphine. But such speculation offers no explanation of the brief and sometimes violent psychoses. The age of the patient and the nature of the disease under treatment afford little help. Mental disturbances have been observed in both the young and in the old patient; and in such widely varying diseases as upper respiratory infections, pneumonia, and gonorrhea. The previous mental health of the patient does not seem to be consequential. In spite of a pre-existing mental disease, we do not hesitate to give the drug when it is indicated, and in such non-sensitive patients there is no aggravation of the previous mental condition. The total dosage and the length of time over which the drug is administered likewise seem to make little difference. Repeated single doses have been known to precipitate a mental disorder following each dose. In others the total amount administered has varied widely, as has the time over which the drug was given. The mental upset occurs altogether independent of other complications.

Sulfanilamide seems to be the chief offender, although others have been known to cause a mental flare-up. The toxic condition of the patient before the drug is given might have a tendency to confuse the clinical picture and lead to the belief that the mental reaction is due to an infectious-toxemia rather than to a chemical toxin. But the usually rapid recovery after withdrawal of the drug, the occurrence of mental symptoms after alleviation of infectious manifestations, the appearance of mental phenomena in patients suffering from diseases which are not accompanied by mental symptoms, and the recurrence of mental symptoms following repeated use of the drug in the same patient would seem to indicate that the manifest mental upset is due to some as yet unknown effect of the drug or to a particular sensitivity of some individuals.

From the evidence at hand, therefore, it seems probable that the use of sulfa drugs may sometimes be the cause of a mental disturbance, demanding the discontinuation of the drug.

An important feature of this type of complication is the danger that impaired judgment of some ambulatory patients may lead to serious entanglements involving others as well as themselves. Such catastrophies should be watched for and guarded against.

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BASIS FOR PHYSICAL THERAPY IN ACUTE POLIOMYELITIS

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The treatment of acute paralytic poliomyelitis has undergone and is still undergoing some extremely interesting and profound changes. To those of us who have had the opportunity of treating acute polio by the traditional methods in the past and who are now utilizing the newer methods, these changes have been dramatic and inspiring. We feel we are watching and perhaps contributing in some part to the evolution of forms of therapy which as never before will give the patient the best possible chance of functional return of muscle power.

We know well that the answer to the problem of prevention and cure of poliomyelitis is still beyond our grasp. No known method of treatment can restore the patient's power of voluntary contraction and relaxation of a muscle after there has been profound loss of anatomic continuity of the motor nerves between the spinal cord and that muscle. However, this does not detract from but rather enhances the value of continued search for means by which all remaining muscle and nerve tissue can be salvaged and utilized with utmost efficiency.

Our renewed interest in the treatment of early poliomyelitis has been brought about in great part by the brilliant observations and persistent efforts of Miss Elizabeth Kenny of Australia. To thoroughly appreciate Miss Kenny's contribution we must realize that she has not only given us a better method of treating poliomyelitis, but, more important, she has brought to us an entirely new conception of the acute phase of the disease.*

Most of us have had difficulty in accepting her method simply because we did not understand that Miss Kenny's contribution wasn't simply a better treatment of poliomyelitis but rather it was an entirely new addition to our knowledge. Fortunately, her ideas are additions to our knowledge and not contradictions or denials of proven pathological facts, but they do demand a treatment during the acute phase of poliomyelitis which conflicts with our traditional forms.

We now see and appreciate the profound effects of muscle spasm in acute poliomyelitis. We realize that loss of voluntary muscle power does not necessarily mean the destruction of vast numbers of motor nerve cells but in a great number of cases is the manifestation of a physiological or psychological blockage and distortion of the flow of nervous impulses from the brain to the muscles. Miss Kenny[1] coined the term "mental alienation" to describe such a blockage.

We now realize more fully than ever before that the delicate balance of muscle power necessary for skilled movements can be severely upset following invasion of the central nervous system by the virus, and new co-ordination patterns must be built up by intelligent muscle re-education, tediously and meticulously carried out over long periods of time.

Realizing these facts, our treatment is designed to release muscle spasm, restore the patient's appreciation of joint movement and muscle action, and re-establish smooth, co-ordinate balance of muscle power.

We arrive at these general principles of treatment very easily and without dispute, but to set up a practical and thoroughly efficient routine of treatment we must have for its basis proven physiological and pathological facts. We can never hope to treat paralytic poliomyelitis with absolute assurance that nothing more can be done until we know all of the details of the underlying pathology and deranged physiology.

Let us not be too quick to believe we have discovered a magical formula until all the facts are known. We do not know all the facts at the present time. Almost all patients now admitted to the Warm Springs Foundation give the history of having had the "Kenny method", given by their family physician or perhaps an osteopath, chiropractor or simply a knowing friend. On further interrogation, it is found that in most cases they have had nothing more than unrestricted activity and the application of hot towels a few times a day. This, of course, is

*We are beginning to realize that we should include in the acute stage of the disease that entire phase beginning with manifestations of irritation of the central nervous system and ending only when all muscle spasm and pain has subsided. Thus, the acute phase of the disease may last from several days to several months.

far from being adequate treatment. It is certainly not the treatment advocated by Miss Kenny and cannot lead to anything but disaster in the case with real involvement.

Let us first consider muscle spasm. Clinically, it is manifest by hyper-tonicity, a hyper-irritability, and involuntary and uncontrolled shortening of the involved muscle. This muscle is tender on pressure and painful when moved. Wright[2] has shown us that this muscle is under increased pressure within its sheath. When the sheath is exposed and cut longitudinally the muscle fibers bulge out of the divided sheath with greater force than that of normal muscles. It is observed that these exposed fibers of muscle are bathed in a sticky fibrinous fluid quite unlike that of the clear serous moisture usually surrounding normal muscle fibers. After the sheath is retracted, fibrous cobwebs are noticed between the muscle fibers and between the muscle and its sheath. This would appear to be evidence of an inflammatory or toxic lesion within the muscle itself. No microscopic studies of muscle biopsies have as yet been reported during this stage of the diesase. As Wright further points out, it is wholly logical to believe that if muscle spasm is not released early, a gradual organization of this inflammatory exudate takes place. This sticky exudate will become tough and fibrous, and the end results will be a shortened, non-elastic, fibrous, useless muscle. When a muscle exhibiting such a contracture is exposed, it is seen that the muscle fibers are pale and yellow, they do not bulge through the divided sheath but remain inert, matted down by this organized exudate. These findings indicate that we must be on the alert to recognize early evidences of spasm throughout the entire muscular system and immediately institute measures capable of aiding the absorption of the inflammatory products.

Relief of muscle spasm may best be brought about by an efficient form of heat applied to the involved region, by careful positioning of the patient and by any measure designed to relieve pain. There are many excellent forms of heat application. Toomey[3] advises the use of cradles lined with infra red bulbs. I am sure all of us have used many modifications of this heat source. However, in my opinion, hot fomentations made up by heating 100 per cent woolen blanketing in boiling water and wrung between very tight wringers before application to the involved region, is the most efficient and practical method known at the present time. One hundred per cent wool has the property of holding heat even though wrung almost completely free of moisture. Thus, the desired intensity of heat can be applied without the danger of burning the patient. These fomentations appear to be of more value than a constant source of heat because they give the circulatory response or contrasts of intense heat followed by rapid cooling. It is not enough to apply one or two hot packs a day. Our problem is to release muscle spasm as quickly as possible and this can only be done by repeated packing—day and night, if necessary.

The position of the patient should be as natural as possible. We feel that a recumbent position which simulates the normal standing posture is more nearly correct than the formerly advised "neutral position". It is felt that by keeping the patient in this "natural" position, normal postural reflexes are encouraged and the muscles and joints are in accustomed and physiological positions.

Careful movements after the pain and spasm have subsided will minimize the formation of limiting bands of scar tissue. Certainly prolonged rest and rigid splinting are absolutely contraindicated. Clinical and pathological findings demand that we make a transition from such rigid immobilization to intelligent physical therapy applied immediately after the diagnosis is made. This must be done if we are to limit the effects of the disease to those neuromuscular units destroyed by primary action of the virus.

Deformities that we formerly considered due to the pull or a normal muscle against a paralyzed one are now considered to be caused by the unrelenting pull of the involved muscle against one primarily uninvolved. The normal muscle is kept in a state of partial or complete flaccidity by a reflex relaxation caused by the reciprocal innervation existing between opposing groups of muscles. The normal muscle is thus stretched beyond its normal length and its pull is rendered inefficient by the breaking action of the contracted muscle. Even though the cause of spasm is not known, the early and late effects of unreleased spasm are so disastrous that we must use all the proven means at our disposal to release it as quickly and as completely as possible.

Changes in the central nervous system could conceivably cause muscle spasm. Physiologists have

long shown us that in the regions of the anterior horns of the spinal cord attacked by the virus of poliomyelitis, we see in addition to motor cells completely destroyed, other apparently normal neurons surrounded by distended tissue spaces, perivascular infiltration, and other evidences of local inflammation. It is possible that these cells could be kept in a state of irritation resulting in spasm of the muscles innervated by these neurons.

Kabat[4] has shown that spinal cord anoxia produces muscle spasm with a distribution very similar to that found in early poliomyelitis. There is no doubt that local muscle and connective tissue anoxia due to impaired circulation must play an important part in the effect, and perhaps cause, of muscle spasm. The potassium-ion concentration and hyper-sensitivity of denervated muscle to acetyl choline must also be considered and studied.

Our next problem is the early restoration of the patient's appreciation of joint movement and muscle action. It is quite clear that this cannot be effectively accomplished until the muscles can be lengthened normally without pain. This cannot be done until the joints can be moved in their full range of normal motion. When muscle spasm has been released and no limitation of joint range is present, the patient is very carefully taught the position and action of prime muscle groups. The joint is passively taken through a normal range of motion. The patient is made aware of the joint movement. He feels the tension of the periarticular tissue and he is taught to feel the movement in the joint produced by the pull of specific muscles or groups of muscles. All this is done because we believe that an apparent loss of voluntary muscle power can result from a subconscious distortion or blockage of impulses in the normal pathways connecting the cortex and the anterior horn cells. The patient is unable to effectively send impulses from his brain to the desired muscle even though the neuro-muscular unit is intact. He has, in a way, forgotten over which pathway to send these impulses. These impulses may be entirely ineffective or may bring about contraction in widely divergent or even opposing groups of muscles. This is the result of the so-called "mental alienation", about which we so frequently speak. "Mental alienation" is not a new medical entity. An example of this so-called "mental alienation" is frequently seen in children with acute joint lesions who cannot voluntarily contract muscles motivating that joint, presumably because of a subconscious blocking due to pain and inability to release reflex protective spasm. We frequently see this loss of voluntary contraction in certain muscle groups following surgical procedures to or about joints. For example, it may take qiute a period of treatment before the patient can voluntarily contract the quadriceps again after a knee operation. In poliomyelitis mental alienation is thought to be due to such factors as muscle pain, spasm, a disuse. Knapp[5] states that undoubtedly this condition includes the temporary paralysis produced by more destructive damage to the nerve cells which later recover spontaneously after the infection subsides.

Our third problem is to restore a smooth balance of muscle power, to again bring about coordinated movement. This cannot be done by allowing a patient to move any muscle he can, but rather it must be done by very tedious and painstaking reeducation of individual groups of muscles considered to be of greatest value in obtaining certain important motions. The patient must be able to bring about a smooth, sustained contraction in these muscles, accompanied by complete relaxation of all other muscle groups not entering into this particular action. No attempt is made to increase the strength of any group of muscles beyond a point where opposing muscles have a balance of power. All our early effort is directed at training our patients to use the right muscle at the right time without the distracting pull of muscles which, though under ready control, are not anatomically placed to produce smooth functional motion. It is with unceasing amazement that I see patients with very little muscle power carry out effective functional activity without the limping and lurching formerly seen. This has been brought about by a method of re-education which gives the patient an appreciation of the correct planes of motion and builds up a balance of muscle power that enables him to carry out smooth motion in those planes.

We admit again that no method yet devised can cure poliomyelitis, but we do say that early treatment, so sketchily outlined above, meticulously and carefully done, will give the patient the greatest amount of functional rehabilitation possible through utilization of his undamaged nerve cells. Even if this treatment offered no statistical advantage over our tradition forms it would still be the method of choice because the patient is far more comfortable

during treatment, the skin and subcutaneous tissue are kept in excellent tone, circulation is improved, joints are kept mobile, muscular contractures are averted and structural deviations and torsions are completely avoided. However, we all feel that we are only scratching the surface of treatment. Our research men—our physiologists and pathologists—must, and eventually will, give us the basis for these newer clinical manifestations. When all these basic factors are thoroughly understood, intelligent treatment will follow as a very natural sequence. Scientific medicine should always take this orderly course. No one of us working alone can expect to develop the flawless treatment. We must profit from the findings of trusted investigators and evaluate these findings in the light of our own experiences.

Consider the evolution of the method brought to us by Miss Kenny. How much more logical and scientific is her method today than it was just five years ago as evidenced by her book published in 1937. The brilliant success of her method of treatment in Minneapolis today must in no small part be credited to the able support of the medical profession working with her. To Miss Kenny, for her keen perception and devotion to the cause of treatment of poliomyelitis, medicine owes a debt that can only be repaid by an equally keen and devoted research designed to support, or, if necessary, to intelligently alter that which she and other serious investigators have given us. To disagree on certain details of technic is a healthy attitude and a spur to continue research, but our therapy must be based on sound, proven physiological and pathological effects as well as brilliant results before we have the right to say that this is the only treatment and that all others are wrong.

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SOME ASPECTS OF CANCER OF THE STOMACH*

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The control of cancer is one of the important problems of the world. At present, of course, the war dominates everything else, but even in warfare the control of cancer is important. Cancer has increased greatly. For the last few years the deaths from cancer in the United States have been about 150,000 each year. Thirty years ago the deaths were about half of this. Eusterman of the Mayo Clinic estimates that about one-third of deaths from cancer are from cancer of the stomach.

Cancer of the stomach is responsible for more deaths than cancer of any other one organ. Cancer of many other portions of the body, as the skin, is far more frequent than cancer of the stomach, but it is more readily observed and cured, so that it does not reach the mortality rate. It is often erroneously stated that cancer of the stomach is the most common cancer of the body. It is the most deadly, but not the most common.

The control of cancer, and particularly of the deadly type of gastric cancer, is not only a humanitarian but a military problem. If there are more than 150,000 deaths from cancer every year in the United States, it is estimated that there are probably three living cases of cancer for every cancer death, and this would make a total of about one-half million persons suffering from cancer in this country at one time. Many of them require at least one attendant, and some of the patients who can afford it have two or more attendants, often trained nurses whose services are so greatly needed in the war effort. If we assume, then, that there is an average of one attendant for each cancer case, giving either whole or part-time attention, it will make the figure about one million persons who are more or less absorbed by cancer. The reduction of the incidence

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of cancer and the cancer death rate would naturally release many of these individuals for military service, quite aside from the saving of life and the reduction of suffering.

There is only one effective treatment for cancer of the stomach and that is excision by surgical operation. Occasionally, a rare case of small round cell carcinoma or lymphosarcoma of the stomach is radio-sensitive, but even in such instances it would be best to operate and then use irradiation. The ordinary variety of cancer of the stomach can be successfully treated only by surgical excision.

The points to discuss, then, are those common to other malignant diseases, an early diagnosis, because it is well known that in cancer elsewhere an early diagnosis and prompt treatment are the best methods to effect a cure. There are, of course, occasional instances in which even early cancer of the stomach is so malignant that prompt operation does not cure, but again these are exceptional cases and we must go by the rule of what usually happens if we wish to improve the results.

Peptic Ulcer and Cancer

There has been much discussion as to the causal relationship between peptic ulcer of the stomach and gastric cancer.. Ulcer of the duodenum rarely results in malignancy, so rarely that it can be almost disregarded, but peptic ulcer of the stomach not infrequently leads to cancer. Whether the lesion, even in the early stage, is primarily a malignant ulcer or whether it is a benign ulcer that is turning into cancer is more or less an academic question. The clinical importance is that the lesion should be recognized as malignant and extirpated as soon as possible.

Rivers and Dry, of the Medical Department of the Mayo Clinic (Rivers, A. B., and Dry., T. J.: Differentiation of Benign and Malignant Gastric Ulcers. *Arch. Surg.*, 30:702, 1935) say: "It seems to us that unless contra-indications are present it is usually safer to treat gastric ulcers surgically." A noted medical gastro-enterologist, Dr. William Gerry Morgan (Morgan, W. G.: The End Results of Treatment for Peptic Ulcer. *Sou. M. J.*, 25:256, 1932) believes that all cases of gastric peptic ulcer are surgical cases for immediate operation. This doubtless is the safest attitude in the long run, but if the ulcer is small it would seem justifiable to give medical treatment for a few weeks.

Friedell (Friedell, M. T.: Prolonged History of Carcinoma of the Stomach in Persons in the Third Decade of Life. *Proc. of Staff Meetings of Mayo Clinic,* 14:529-535, Aug. 23, 1939) quotes instances of prolonged history of carcinoma of the stomach in the third decade of life and gives a report of fourteen patients who had cancer in the third decade of life. Of these the average duration of symptoms was 3.3 years. In eight of these cases there were symptoms of an ulcer type, in three there were nausea and retention vomiting, and in three others there was a non-specific type. Comfort, of the Medical Department of the Mayo Clinic, in discussing these cases, states: "Favorable cases (of peptic ulcer of the stomach) may be selected for medical treatment but in all fairness to the patient surgical exploration constitutes the treatment of choice whenever the lesion does not heal promptly and doubt persists regarding the nature of a lesion. In many instances the pathologist must be the final judge of the nature of the lesion."

Relief of Symptoms

One of the most fatal impressions concerning cancer of the stomach is that if medical treatment is given and the patient is relieved of his symptoms, it is, therefore, a therapeutic test that the disease is not malignant, just as giving quinine for an indefinite fever is supposed to be a therapeutic test for malaria. *As a matter of fact, most early cases of cancer of the stomach are relieved of the symptoms for a while by medical treatment as given for peptic ulcer.* The fallacy of the belief that diet is a therapeutic test for gastric cancer has been the cause of many deaths and prolongation of the advance of the disease that otherwise would not occur.

Friendship

One unfortunate obstacle to the early diagnosis and treatment of cancer of the stomach is friendship. So many individuals with a great dread of cancer of the stomach appeal to the sympathies of friends and physicians for a different diagnosis or a delayed diagnosis that the treatment often follows the well-known lines of military failure—"too little and too late". Thus, Thomas Scholz, of New York (Scholz, Thomas: Curriculum Vitae of Two Gastric Cancers. *Am. Jour. of Cancer,* 18:834-851, August, 1933) reports two cases which he diagnosed roentgenologically as cancer of the stomach, one 2½ years and the other 3½ years before they came to an opera-

tion. At operation the lesion was too extensive for resection, but the patients were apparently in good health when the diagnosis was first made. Because of the apparent good health and well-being it was difficult for the patient and for the attending physician to accept the diagnosis at a time when the lesion was operable. Dr. Scholz says: "The practitioner must, therefore, realize that x-ray examination furnishes him a means of obtaining a diagnosis in practically every instance at a sufficiently early stage to make recovery possible by a timely operation. But to save the patient's life he must order the x-ray examination *early* and not late in the disease. It is still a common experience; in fact, it seems to be the rule that patients are treated for digestive disturbances for months and even years without previous roentgen examinations, and that the latter are ordered only after clinical evidence of gastric malignancy has appeared, just for confirmation. Not infrequently great pride is felt in such a confirmation. It apparently is not yet fully grasped that such an attitude is nothing to be proud of. On the contrary, it should be recognized that such a delay in the use of roentgenology is the worst service the physician can possibly render his patient, because thereby he robs him of the only chance of recovery, as a late x-ray examination is quite as useless as a late clinical diagnosis."

SYMPTOMS AND DIAGNOSIS

First of all, we must dismiss the ancient textbook description of cancer of the stomach with frequent vomiting, palpable mass in the abdomen, sallowness of the skin, and enlarged lymph nodes in the neck. Such cases are usually hopeless. It would be as reasonable to put off the diagnosis of a ruptured appendix until general peritonitis is obvious as to delay the diagnosis of gastric cancer to such a stage. To be sure, there are a few instances in which cancer of the stomach as a palpable mass in the abdomen can be removed successfully, possibly with a slight hope of cure. These are the types of bulky cancer often with degenerative or colloid changes.

The symptoms of gastric cancer are not always continuous. They may be remittent or intermittent just as in peptic ulcer. Among other fallacies, according to Gaither (Gaither, E. H.: Gastric Carcinoma: A Clinical Research. Preoperative Course and Postoperative Results. *Sou. Med. Jour.*, 28:107, 1935), are the following: "(a) Local gastric symptoms, loss of appetite, cardialgia, eructation, pyrosis, nausea, vomiting, pain, distention, and variable types of discomfort are no worse in beginning carcinoma than in other gastric disease. (b) A latent stage is possible during which time the process advances very slowly, with an utter absence of symptoms. (c) A general marasmus, or a variable anemia, may occur, with the gastric symptoms so wholly in abeyance as to be quite unrecognizable. (d) A beginning carcinoma may progress without definite symptoms; again, it is marked by ulcer symptoms, or symptoms of chronic gastric catarrh."

Cancer of the stomach is more common in men than in women, though in my experience the incidence of cancer of the stomach in women is not so infrequent as it appears to be in other clinics. The majority of cases of cancer of the stomach occur near the pyloric end; consequently, the symptoms of obstruction prevail. This is very fortunate, because it will produce symptoms at an earlier stage than with cancer in other portions of the stomach without obstruction. This obstruction may cause water brash, heartburn, discomfort, and sometimes nausea and vomiting before the lesion is far advanced. Pain is not often present, but may be cramp-like, sharp, or boring. It is usually in the upper epigastric region. When intermittent pain relieved by food becomes continuous, it is supposed to be significant of a benign lesion turning into cancer, but this symptom may be found in a benign ulcer that has slowly perforated posteriorly.

There is a marked difference in symptoms in different patients caused by the same lesion. Libman (Libman, E.: Observations on Individual Sensitiveness to Pain. *J. A. M. A.*, 102:335, 1934) has called attention to this. Thus, in the hyposensitive, either no symptoms may result from a gastric lesion that would cause marked indigestion in the hypersensitive, or there may be substituted symptoms referred, for example, to the chest. In the early stages of gastric carcinoma, the appetite may be quite variable, and the patient may actually gain weight. Nausea and vomiting are common, although often there is no vomiting until later in the disease unless obstruction exists. Lesions along the greater curvature particularly may be unaccompanied by vomiting throughout the course of the disease. The vomiting of blood is infrequent in cancer of the stomach. Probably not more than 5 per cent of cases of gastric cancer actually vomit blood in any considerable amount, whereas in 20 per cent of peptic ulcers

there is distinct hematemesis or melena. Occasionally, however, vomiting of a small amount of coffee-ground-like material occurs, but even this is not as common in gastric cancer as it is supposed to be. A much more common sign is occult blood in the stool, which can be determined by the guaiac or benzidine test after a 3-day meat-free diet, or the string test of Einhorn may show blood. (Horsley, J. Shelton: Cancer of the Stomach. *Southwestern Medicine,* 256-259, August, 1940).

Only about 50 per cent of gastric cancers have decided ulceration. Tarry stools are rather infrequent, but occult blood may be found in many cases in which neither hematemesis nor tarry stools are obvious. Loss of weight is common, but it should not be too much emphasized, since it is usually a late symptom. Anemia is often present, although this, too, may be a late symptom. However, it may arise from a large fungating cancer of a colloid type and low grade of malignancy or from a malignant polyp, and does not necessarily indicate that the disease is inoperable.

The Gastric Contents

Examination of the gastric contents may be suggestive, but it must not be too greatly valued. Most cancers of the stomach, particularly if well advanced, show achlorhydria, or at least a diminished amount of hydrochloric acid in the gastric juice, and this finding along with clinical symptoms suggesting gastric cancer must be given full weight. There are, however, two conditions that must be considered in this connection. The first is that achlorhydria is more common than it was formerly supposed to be, and seems to increase with advancing years. It is difficult to imagine that millions of cells in the stomach whose chief function is to secrete acid can remain entirely functionless indefinitely without some histologic lesion, though in many cases of achlorhydria in patients who die of something else microscopic examination shows but little if any alteration of the gastric structure. Achlorhydria may be a sequence of a low-grade chronic gastritis, which in itself from irritation may favor cancer. Indeed, Hurst believes that gastritis is the precursor of cancer in about 75 per cent of cases (from Comfort, M. W., and Butsch, W. L.: *Proc. Staff Meetings, Mayo Clinic,* 13:151-154, March 9, 1938).

The second condition is that occasionally gastric cancer is found when the hydrochloric acid in the gastric juice is normal.

The Gastroscope

The gastroscope has come into more favor in recent years, since Schindler's gastroscope has been in use. It is undoubtedly helpful in certain cases, particularly in detecting lesions in the cardiac portion of the stomach where there is difficulty in locating them with x-ray. However, it should not be too greatly depended upon. The mere presence of a small ulcer in the stomach seen through the gastroscope does not necessarily indicate whether it is benign or malignant. Not infrequently the nature of such a lesion cannot be definitely determined until microscopic examination has been made.

Roentgenologic Examination

The most important method of making a diagnosis of malignant lesions of the stomach is by x-rays. Such an examination, however, should be made by one who is skilled in roentgenologic diagnosis of the gastro-intestinal tract. A half-baked roentgenologic diagnosis of lesions of the stomach or colon is worse than none at all. The method of diagnosis by x-ray has reached a high state of efficiency, but it must be recalled that when a filling defect of cancer is observed in the stomach, the lesion is already advanced. Even a punch-like defect supposedly characteristic of a benign ulcer of the stomach has been found occasionally to be caused by cancer. The defect from a cancerous ulcer may appear partly to fill up on subsequent x-ray examination. Then, too, it is possible to have both a benign duodenal ulcer and a cancerous gastric ulcer existing in the same patient. The late Dr. Carmen, chief roentgenologist at the Mayo Clinic, developed an x-ray sign, called "meniscus", which is almost pathognomonic of gastric cancer when properly interpreted. It consists of a defect in the stomach that goes no deeper than the mucosa, but when pressed upon with the stomach partly filled with barium it produces a lens-like appearance of the barium in the base of the defect. This is due to the fact that most cancerous ulcers have an everted and prominent margin, and when pressure is made upon them they tend to close and so shut off the barium in the depths of the ulcerated area. Deeply penetrating lesions are usually benign. The observation of the pattern of the mucosa and the sequence of peristalsis over the lesion is important in picking up an early cancer of the stomach.

It has already been emphasized that peptic ulcer of the stomach is an object of suspicion. The size

of the lesion has much to do with the diagnosis. Alvarez and MacCarty find that there is one chance in fifteen that any ulcer in the stomach smaller than a dime (1.5 cm. in diameter) and one chance in ten that an ulcer smaller than a quarter (about 2.5 cm. in diameter) is early cancer. If it is larger than a quarter but smaller than a half dollar, the chances in favor of ulcer or cancer are about equal. If it is larger than a half dollar but smaller than a silver dollar, it is almost certainly cancer. (Comfort, W. M.: Discussion of "Prolonged History of Carcinoma of the Stomach in Persons in the Third Decade of Life" by M. T. Friedell. *Proc. of Staff Meetings of Mayo Clinic,* 14:529-535, Aug. 23, 1939).

Summary of Diagnosis

In order to make an early diagnosis of cancer of the stomach we should be to some extent cancer-minded. We more frequently find what we are actually looking for. Any patient over 35 years of age, and particularly a man who has gastric symptoms, should be treated by a general practitioner for a few weeks, and if the cause of these symptoms can be ascertained and corrected, nothing further need be done. But if the cause of the symptoms cannot be ascertained and corrected, the patient should be given a thorough roentgenologic study. The earlier the diagnosis is made, usually the more difficult it is. If, then, as we can adopt this policy of an early thorough examination as has been outlined, the great majority of these patients will prove to have either a nervous condition or some extra-gastric cause for their symptoms which can be relieved, but every now and then a case of gastric cancer will be picked up that would otherwise be missed. I have seen patients with inoperable cancer of the stomach that have been treated for "nervous indigestion" for many months or years. It is true that there is a small proportion of cases in which the malignancy develops along the "silent" area of the greater curvature or cardiac end, and nothing can be done because there are no symptoms until the disease is too far advanced for treatment, but it is equally true that the great majority of cases of gastric cancer are located either in the pyloric end of the stomach or in the main body of the stomach, readily susceptible to partial gastrectomy.

Treatment

As has been mentioned, the only satisfactory treatment for cancer of the stomach is surgical excision. This should always be some form of partial gastrectomy. Merely removing the local lesion is not enough. The fact that this treatment has not been adequately applied is well brought out in a series of necropsies by Dr. Margaret Warwick (Warwick, Margaret: Analysis of One Hundred and Seventy-Six Cases of Carcinoma of the Stomach Submitted to Autopsy. *Ann. Surg.,* 38:216, August, 1928). She has called attention to the fact that in 23 per cent of the necropsies of 176 gastric cancers the cancer was still limited to the stomach, whereas in the total deaths in a larger series of necropsies of gastric cancers of Saltzstein and Sandweiss (Saltzstein, Harry C., and Sandweiss, David J.: The Problem of Cancer of the Stomach. *Arch. Surg.,* pp. 113-127, July, 1930) only 7.7 per cent had undergone a partial gastrectomy. This shows undoubtedly that many cases of cancer are permitted to go to their death that might have been given some chance by a gastrectomy done by one skilled and trained in this work. One of the chief causes of deaths in cancer of the stomach, according to Dr. Warwick, is perforation of the stomach. It has usually been assumed that perforation of the stomach is due to peptic ulcer, but in Dr. Warwick's series of 176 cases there was open ulceration in only about 45 cases, and in about half of these death was due to perforation and peritonitis.

Naturally, preventive treatment has a definite place. Aside from the tendency of some gastric ulcers to become cancerous, or, as has been said, what amounts to the same thing as far as practice is concerned, having a very early cancerous lesion simulate peptic ulcer, a so-called benign polyp in the stomach is very likely to be a pre-cancerous lesion. McRoberts (McRoberts, J. W.: Gastric Polyps. *Proc. of Staff Meetings of Mayo Clinic,* 8:685, 1933) has reported five cases of gastric polyp removed at operation in which histologic examination showed that four contained definite cancerous issue. One case in which three apparently benign polyps were removed by excision with the cautery was reported, and the patient came back 6½ years later with gastric cancer that was inoperable.

Finesilver (Finesilver, Edward M.: Benign Tumors of the Stomach. *Surgery,* Vol. 12, No. 2, 216-235, August, 1942) records nine cases of apparently benign tumors of the stomach in which three had become malignant at the time of operation. Eliason and Wright examined twenty-three cases of polyps

of the stomach and found carcinomatous changes in eight. Benedict and Allen reported seventeen cases of gastric polyp from the records of the Massachusetts General Hospital and found seven in this group, or 41.2%, showed evidence of malignancy. The presence of a so-called benign polyp in the stomach, then, is a very strong indication for its removal. This can very often be done through a gastrotomy opening without necessarily doing a partial gastrectomy. Such a removal, however, should be followed preferably by some form of pyloroplasty or a gastro-enterostomy in order to relieve the pressure in the stomach during healing.

The patient should be well prepared before any operation is undertaken. Intravenous dextrose in Ringer's solution or hypoclysis, and concentrated food with high vitamins, should be given for several days. There should also be gastric lavages to have the stomach cleared out. Dilute hydrochloric acid should be given and the stomach washed out with ½ or ¼ of 1 per cent of dilute hydrochloric acid. This is an excellent physiologic antiseptic. It may be necessary to give a transfusion of blood before operation, but almost always a transfusion should follow operation.

For gastric cancer some form of gastrectomy is indicated. If the lesion is near the pylorus, it can frequently be removed by a type of Billroth I operation in which the stump of the stomach is united to the stump of the duodenum. I have been using a modification of the Billroth I for about 17 years. However, when the cancer is in the body of the stomach and a more extensive operation is indicated, a form of Billroth II should be utilized. In this type the stump of the stomach is united to the jejunum. All gastrectomies, except total gastrectomies, are classified either as a modification of Billroth I when the stump of the stomach is united to the stump of the duodenum, or a modification of Billroth II in which the stump of the stomach is united to the jejunum. This modification of Billroth I permits more nearly a physiologic reconstruction. The stomach contents normally empty into the duodenum. The susceptibility to the irritation from the stomach contents increases from the duodenum down to and including the colon. The reason why peptic ulcers are so frequently found in the duodenum is because it receives the impact of the concentrated gastric juice. If the mucosa of the duodenum were as susceptible to the gastric contents as the middle or lower jejunum or ileum, we probably would all have peptic ulcers.

That the Billroth II type of operation is not without danger, even after cancer, has been shown in a report by Fordyce St. John, of New Jork (St. John, F. B., Whipple, A. O., and Raiford, T. S.: Treatment of Carcinoma of the Stomach; Summary of Results. *Am. J. Surg.*, 3:246, Feb., 1926), of a case in which cancer of the pyloric end of the stomach was removed by a Billroth II type of operation and the patient a few weeks later died of a perforating ulcer of the jejunum. If a Billroth II type is to be utilized, the Hofmeister modification appears to me to be more satisfactory than other modifications. It requires less loop and avoids unnecessary kinking.

Gastro-enterostomy has but little, if any, place in the therapy of gastric cancer. Even when a large fungating mass occupies the pyloric end of the stomach, the modification of Billroth I method, as described, conveys but little more danger and makes the patient more comfortable than a gastro-enterostomy with the sloughing mass left behind.

POSTOPERATIVE CARE

An important feature of the postoperative care is keeping the stomach empty. The use of a Levine or Jutte tube through the nostril is not only uncomfortable, but is by no means free from danger. Iglauer and Molt (Iglauer, S., and Molt, W. F.: Severe Injury to the Larynx Resulting from the Indwelling Duodenal Tube. *Ann. Otol., Rhinol. and Laryngol.*, 48:886, 1939) reported severe injury to the larynx from indwelling duodenal tubes, with ten cases occurring over a two-year period and eight of these developed laryngeal stenosis that required tracheotomy. Two of the patients died. In order to prevent this complication, we use what we call a simple tube gastrostomy. This can be utilized not only after any partial gastrectomy but after gastro-enterostomy or pyloroplasty. After the posterior row of sutures, uniting the stomach to the duodenum or to the jejunum, has been placed, a sharp-pointed hemostat is thrust through the stomach from within outward at a point on its anterior wall near the greater curvature about 3 inches from the stump of the stomach. A soft rubber catheter with additional perforations is drawn through until about 3 or 4 inches of it protrudes into the stomach. It is fastened to the wall of the stomach by a fine suture of chromic catgut. A purse string suture of the same material is

placed around it. When the union of the stomach and bowel is completed, the butt end of the catheter is drawn through a stab wound to the left of the abdominal wound at a point where the stomach easily approximates the parietal peritoneum. The stomach is fastened to the parietal peritoneum with four sutures of fine chromic catgut and a tag of omentum is drawn around for additional security.

CONCLUSION

Trivial symptoms of indigestion in those over 30 years of age, especially in men, should be considered seriously and not casually, and the cause of these symptoms should be definitely ascertained. The mortality rate from cancer of the stomach is amazing. Comparatively few patients with cancer of the stomach are given a chance for recovery in the reasonably early stages. The only treatment for cancer of the stomach is some type of gastrectomy. An operative technic should be employed which will radically remove the lesion and at the same time restore the gastro-intestinal tract as nearly as possible to its normal.

TREATMENT OF BURNS
With Special Reference to the Use of Sulfadiazine*

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Much evil and little that is good attends a universal calamity such as the present war. Among the few benign influences is the impetus which necessity forces on constructive scientific research, especially in the province of medicine and surgery.

In this particular war, one of the most prevalent and serious of injuries is the burn. We can expect a much more expert approach to the treatment of such traumata than we have heretofore known, something which will benefit the unfortunate victims now as well as the civilian population in future time of peace.

To illustrate the high incidence of burns in this conflict, it is stated[1] that by far the majority of casualties at Pearl Harbor were of this variety, and to show further what is entirely within the realms of possibility, a reliable writer points out the extreme hazards of fire following air raids. He says that one plane can drop 1,000 small thermite bombs, and out of this number 75 will start serious fires. In addition to air raids, many burns result from flaming oil, both from ship sinkings and from bursting fuel containers.

Already the management of traumatic wounds and burns has made vast strides toward ideal handling, and our results in treating burns, often one of the most disappointing and discouraging problems with which the medical profession has to deal, have begun to offer some ray of hope.

The purpose of this paper is to outline and emphasize a rational treatment of burns with particular attention to a relatively new agent which has much to recommend it and little to condemn it. This agent is a special solution of sulfadiazine developed for local use by Dr. Kenneth Pickrell of Johns Hopkins.

Before discussing the local therapy of burns, it might be profitable to consider the general measures now in use from the time the accident occurs until the definitive treatment is well under way.

The first point to decide is the seriousness of the burn. The extent, the degree, and the causative agent are all important factors in making this decision. The amount of body surface burned may be conveniently estimated by Berkow's method. In this the trunk constitutes 38 per cent of the total, the lower extremities the same, the head 6 per cent, and the upper extremities 18 per cent. Children vary somewhat according to age. Any burn involving 20 per cent or more of the body surface, no matter how superficial, is potentially serious. Some authors consider a smaller area as the lower limits of a serious burn.

The degree is often difficult to evaluate. The American system classifies burns into three degrees. First degree burns cause erythema, second degree cause vesication, and third degree cause injury to the entire thickness of skin or to the underlying tissues. It is occasionally helpful to further subdivide third degree burns into those causing injury to skin alone, those damaging muscle, and those injuring bone. Some burns, of course, will have several degrees represented in the various areas covered.

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Any third degree burn is serious, and second degree burns involving 15 per cent or more of the body surface are major burns. Some people are more sensitive to these injuries than others, blonds more than brunettes. This will have to be a point of consideration also.

The agent is another factor to be weighed in a decision on the seriousness of a burn. Short exposure to steam or fire may cause an extensive superficial burn, while electricity may cause a small superficial and a large deep area of trauma.

Certain chemicals, such as strong acids and alkalies, and certain vesicants like Lewisite, will continue their effect until removed or neutralized, a point of great importance in the wise treatment of burns.

If it is decided that the burn is a minor one, then the treatment may be executed successfully by means which would not be at all satisfactory in a major burn. These minor ones will not need hospital treatment, and general measures, other than a mild narcotic such as codeine in small quantities, or a sedative, will not be of great consequence. Usually these may be treated by cleaning the burn with xylene, ether, benzene, or similar detergent, if much soiled or covered with grease; then applying an ointment or jelly containing tannic acid, gentian violet, butesin picrate, sulfadiazine, or with vaseline gauze alone. Sterile dressings are then applied and the patient instructed to return daily, and, later on, at greater intervals, for further observation.

If the burn is mainfestly a serious or major one, or if there is potential danger of it becoming so, then the patient should be sent to a hospital or other center properly equipped to manage such injuries. Before the person is moved, however, proper first aid should be administered. This consists in giving opiates in dosage sufficient to relieve pain and thus reduce shock. This is usually ½ grain of morphine in the adult and may be repeated in half an hour or so if necessary. It is rare to overdose a patient in severe pain with narcotics. Then cover the injured surface with sterile or clean dressings. Clean sheets or towels will do if surgical dressings are not available. It is better not to use greases or ointments if the injured person is going to be treated at a hospital, as these will have to be removed before the customary institutional treatment can be started. If the case is severely shocked, blankets should be applied and the person taken to the hospital as soon as possible.

On arrival at the post where care is to be completed, the patient should be given general treatment immediately. These measures are most essential and should take into consideration that the majority of the seriously burned suffer from some degree of shock. For the first few hours a condition known as primary shock occurs. This is probably of neurogenic origin, and is not so common among healthy young men, especially those in the armed forces, as it is in the elderly, in children, and in women. It is not different from the classical shock syndrome, with pallor, sweating, rapid weak pulse, low blood pressure, cold exremities, and low temperature. This picture, if not already present, should not be awaited before beginning treatment. The best time to treat shock is before it develops. After the primary shock period, a condition frequently known as secondary or burn shock supervenes. The patient then shows evidence of toxicity, with rising temperature, restlessness, full bounding pulse, and dry flushed skin. Some have thought that this condition is due to absorption of toxic substances liberated from the burned tissues. Blalock believes, however, that fluid loss with the accompanying reduction in plasma protein accounts for this toxic effect.

Regardless of the stage of shock or incipent shock that the patient is in on admission, it is wise to begin treatment immediately. If he is patently in excellent condition, the local treatment should likewise be started, but if any doubt exists it is better to wait until the patient shows some recovery from the administration of intravenous plasma, blood transfusion, glucose, saline, or acacia solution.

There is an enormous loss of electrolytes and plasma in extensive burns. As much as 70 per cent of the blood volume may be lost in 24 hours when as little as one-sixth of the body is burned.[2] This loss takes place into the tissues by diffusion and through the injured capillaries in the burned area. Oftentimes the patient may literally be lying in a pool of his own tissue fluids. This loss must be replaced if shock is to be overcome, and is best done by plasma infusions in normal or dilute solution. The amount of normal plasma needed may be calculated roughly by hematacrit readings which are an index of the blood concentration. For every point above 45, 100 cc. of normal plasma should be given in the adult, and children in proportion to body weight. An addi-

tional 25 per cent should be given for every gram that the total plasma protein falls below a reading of 6 gms. per 100 cc.[3] Eight to ten hours later, another reading is made, and the need for further plasma transfusion estimated. Blood transfusions are also extremely helpful, but are not so efficient as plasma because there already exists a hemoconcentration and the further addition of red cells needlessly embarrasses the circulation. A hemoglobin of 140 per cent is not long compatible with life in man, and if it is already 110 to 120 from the burn, the extra cellular elements from transfusions will obviously cause an approach to the danger point.

Crystalloid solutions such as saline or glucose are not so effectual as they diffuse readily through the injured capillaries, and their effect rapidly lost. It is estimated that when 1000 cc. of glucose or saline solution is given intravenously in shock, the entire amount will pass into the tissues in an hour's time.[4] Not only are they lost themselves, but they carry out plasma proteins with them in great abundance.

Acacia solutions more nearly approach the ideal, but have the marked disadvantage of being retained in the body. Occasionally there are severe reactions following their use.

However, in the shock following a burn, if plasma or blood are not immediately available, one of the other solutions should be given, because if the shock level is maintained for over three hours, irreversible changes take place[5] and no treatment will be of avail.

The question of lowering the head and applying heat in shock is another point of interest and discussion. Both are invaluable according to most authors, but care in the amount of heat applied should be observed. The extremities are cold because of a physiological reaction. Blood normally in the peripheral circulation is concentrated in the vital centers—the adrenals, heart, lungs, and brain. If much heat is applied to the arms and legs, a reflex vasodilatation of the peripheral vessels will result and thus increase the shock. This point has been emphasized by Blalock.[6] Usually blankets will be sufficient, unless the patient has been exposed to extreme cold.

The use of adrenal cortical hormone,[7] such as eschatin, is advocated by many prominent writers. The basis for its use is a reduction in the capillary permeability, thus causing a diminution in the loss of electrolytes and plasma. It also causes a marked retention of chlorides, much of which is lost in burns. Oxygen is administered if the anoxia from hemoconcentration is marked. Both of these therapeutic measures have limited value, and some feel that their use is of more theoretical than practical importance.

If it is decided to give adrenal cortex extract, it may be given in 1 cc. doses subcutaneously every hour until improvement takes place, or it may be given in 5-10 cc. intravenous injections every 6 hours. The first 48 hours is the optimum period for results in the use of this substance.

When it is felt that the general measures have been satisfactorily started, local treatment is undertaken.

Local therapy of major burns has been and still is a subject of much discussion, particularly since Davidson's pioneer work on the use of tannic acid in 1925.

The rationale of local treatment is based on four major principles. First: the formation of a coat or coagulum which will seal over the wounded capillary bed and prevent further loss of body fluids. Davidson[8] believed that this coagulum also served to "fix" the injured cells so that toxic substances thought to be liberated by them would be reduced in amount. Second: the prevention of further contamination by this protective coating. Third: the production of some degree of antisepsis inherent in the coagulum-producing substance. Fourth: the partial or complete relief of pain resulting from covering over exposed superficial nerve endings. In some agents this effect is made more pronounced by the presence of a local anesthetic.

Regardless of the agent used, the burn should first be subjected to a minor debridement, in which all the blisters and superficial devitalized skin are removed.

General anesthesia is not usually necessary or even advisable. If sufficient analgesia is not produced by opiates, further sedation can be induced by one of the barbiturates given orally or by rectum. The patient may be too shocked to warrant general anesthesia, or there may be concomitant injuries which make this out of the question. This is especially true in war injuries where the majority of burns are accompanied by other, and sometimes even more serious trauma. In those occasional cases where general anesthesia is desired, intravenous pentothal or evipal are invaluable.

Strict asepsis should be adhered to in order not to

contaminate the wound any further. This obtains even to the details of scrubbing, using gloves, adequate masking, etc.

Burns which are dirty, covered with oil or grease, or have foreign particles ground into them, should be cleaned gently but thoroughly. This is one of the most difficult parts in the treatment of these injuries, but good results with rapid healing and little scarring will reward painstaking efforts at this stage. A satisfactory detergent is hard to find, and it will depend somewhat on the contaminating substance as to what cleansing agent to use. If the soiling is due to earth, ordinary soap and water will be satisfactory. Grease or oil will have to be removed by a solvent first, and then cleaned with soap and water. Solvents usually used are xylol, benzene, ether, dreft or ninol. Cotton is best to use in the process as gauze further injures the damaged capillaries. Saline irrigations will complete the cleaning.

After the burn has been cleaned, it is treated with the local agent decided upon. The most commonly used are 5 to 10 per cent solution of tannic acid or a combination of 10 per cent tannic acid and 10 per cent silver nitrate, either together or separately, the tannic being used first. Other frequently used solutions are gentian violet in 1 per cent aqueous solution, and triple dye, consisting of 1 per cent gentian violet, 1 per cent brilliant green and 0.1 per cent neutral acriflavine.

Codliver oil compresses have been used successfully,[9] as has tulle gras,[10] a fine meshed gauze impregnated with paraffin, balsam of Peru and olive oil. Tanexin, thymolidine and other proprietary preparations have given good results in various investigators hands.

The closed plaster treatment[11] also has won wide approval. In this method, after preliminary cleaning, the burned area is covered with paraffin or vaseline gauze, and plaster of paris applied directly over this. The plaster is left on 10-14 days according to the amount of discharge, and is reapplied if necessary. The proponents of this plan claim less pain, much less difficulty in handling, and a speeding up of recovery.

Adams[12] believes that the usefulness of any eschar treatment is limited to first and second degree burns, and recommends saline baths and compresses for those of third degree.

In recent months sulfadiazine has been used for local application in the treatment of burns, and bids fair to become one of the most effective of all. Dr. Kenneth Pickrell,[13] of Johns Hopkins, in 1941, feeling that sulfonamide therapy was basically sound, developed a solution which would bring the drug in close contact with the burned surface, and at the same time form a thin, translucent film, which met admirably the criteria of a good anti-burn agent. It sealed over the injured area, prevented or markedly reduced the loss of plasma proteins and blood electrolytes from the capillaries, partly relieved pain, and brought an effective bacteriostatic agent into relation with the potentially infected field. This solution is 3 per cent sulfadiazine in an 8 per cent aqueous solution of triethanolamine. It was used very successfully in 115 patients, with a reduction in healing time, less pronounced scarring, and a much lower incidence of infection than in previously used methods. Only two out of the total number were infected, and the toxicity of the drug proved to be quite low, as only one of this number showed toxic effects. This patient had over 80 per cent of the skin surface burned and succumbed in 48 hours.

The procedure outlined by Pickrell is first to begin measures to combat shock, after which cultures are taken from several burned areas. While the attending surgeon scrubs, an assistant or nurse sprays the burn. This helps relieve pain so that cleansing can be done without general anesthesia. Afer an aseptic debridement the patient is transferred to his bed on which sterile sheets have been placed. It is wise, if possible, to bring the bed to the treatment room in order to save excessive moving of the patient.

The spraying is then continued according to a definite scheme; every hour the first day, every two hours the second day, every three hours the third day and every four hours the fourth day.

A cradle fitted with colored lights to prevent glare is placed over the patient and the temperature kept at 85 to 90 degrees F. This treatment produces a thin translucent eschar, and further spraying is necessary only if cracking exposes raw surfaces. The eschar begins to separate in about ten days and is cut away where intact epithelium underneath is present. Compresses of the sulfadiazine-triethanolamine mixture and sterile mineral oil sprays, followed by saline compresses, help the coagulum to separate in large sheets. The eschar in third degree burns should be left on at least two weeks and then removed for early grafting, which is a necessity for

good recovery with a minimum of scar formation.

Sulfadiazine is rapidly absorbed, appearing in the blood within several hours. The concentration rarely approaches dangerous levels when used in this way, as it does not usually go as high as 8-10. The maximum is reached in two days and then decreases to 1-2 mgms. per cent on the fifth.

In less severe burns, the treatment is carried out in the accident room or office. Pickrell places in this category any second degree burn involving less than 20 per cent of the body surface. These cases are sprayed frequently over a period of two hours, and are then discharged with a dressing of vaseline gauze or an ointment containing 5 per cent sulfadiazine and 8 per cent triethanolamine in a stearin base. The patient returns daily, if necessary, for further spraying and similar dressings until healed.

Just recently, the sulfadiazine solution has been modified, and is said to be even more effective. Although this newer preparation has not been used on any of the cases in our series, it is now available.

This solution contains 2 per cent sulfadiazine and 2½ per cent methylsulfate cellulose (methocel), in 8 per cent aqueous triethanolamine. Aerosol in minute amounts is added as a wetting agent to insure more effective contact with the burn.

Fifty patients with severe burns and several hundred minor burns have been treated with the improved solution by Pickrell.

The technic differs somewhat because the methocel speeds coagulum formation. Consequently, the injured surface needs spraying only every three or four hours for 12 to 16 hours, and afterwards only as indicated.

Seven (7) cases have been treated at the Pulaski Hospital by the sulfadiazine method, and 2 more are undergoing treatment at the present time.

CASE REPORTS

Case 1: K. M., a 32-year-old powder plant employee, was burned on October 9, 1941, following an explosion. He suffered second degree burns of the face, ears, neck, hands, wrists and legs, including portions of both thighs. Altogether there was approximately 30 per cent of his body surface burned. He was given first aid treatment of morphine and sterile dressings, and brought to the hospital. Although the patient was not in shock, he was given intravenous fluids, and sulfadiazine sprays were begun after debridement had been done under sterile precautions without anesthesia. He ran a temperature which reached a peak of 102.4 on the fifth day, after which there was a gradual decline. On the second day the drug concentration was 5, and on the fourth day it had gone down to 1½. The sprays helped his pain moderately, but it had to be controlled further with opiates and sedatives. A definite eschar began to form in 8-10 hours and by the third day coagulation was complete. Occasional spraying was done after this as it seemed to relieve his pain. A mild infection developed between his fingers, and another at the edges of the burn on his left leg. However, it was not at all severe, and cultures showed the causative organism to be staphylococcus aureus. The infection cleared rather rapidly. On October 19th, mineral oil sprays were begun, and by the 21st most of the eschar could be removed. The results in this burn were excellent, there being very little scarring, and but slight contracture of two fingers on each hand. The new skin was rather tender for a long time, and had a tendency to itch and burn, but probably no more than would be expected in any case. The patient was discharged November 27, but could have left sooner if necessity demanded.

Case 2: B. L. M., a 10-year-old girl, was burned on the left side of her abdomen, chest, and thigh when her dress caught fire on a stove on February 3, 1942. About 10 per cent of her skin surface was involved in second degree burns. A debridement was done, and sulfadiazine sprayed on in the usual manner until the fourth day. After this it was done less frequently. No intravenous medication was deemed necessary. On the second night, her temperature was up to 103.4 but dropped after forcing fluids by mouth. There was no hemoconcentration, the hemoglobin remaining at 92 per cent. Urine showed a one plus albumin on the third day, but none thereafter. In this case the pain was relieved after the third spraying, and a nice eschar was formed by the second day. There were no toxic effects from the drug, and the patient left the hospital on February 14, in good condition. Final healing took place without scar or contracture.

Case 3: A. L. K., a 38-year-old man, was admitted on November 7, 1941, with second degree burns of his right hand resulting from inadvertent immersion into a vat of oil at 400 degrees Fahrenheit. The blisters and loose skin were removed, and the sulfadiazine sprayed on as in the other cases. Intense pain at first required large doses of morphine, but pain became less after the first spraying. It recurred from time to time, and opiates had to be administered over a period of four days. Edema of the hand occurred, but practically no infection, and eschar formation was complete in about two days. Except for a trace of albumin, urinary and blood findings were normal. His temperature never rose above 99.6. He was discharged on November 11, with vaseline gauze dressings on his hand, and was followed thereafter in the office. Healing took place in about two weeks after discharge, with no residual scarring or contracture.

Case 4: W. A., a 16-months-old baby, was burned on January 25, 1942, when her clothing caught fire on the kitchen stove. The second degree burns were debrided and sprayed frequently in the hospital for an hour and the patient sent home, following the application of vaseline gauze dressings. Similar treatment was given the

following day. On the third day she developed a severe upper respiratory infection and was admitted to the hospital. No pneumonia had occurred, but sulfathiazole was started as a precaution. The temperature was 103 on admission on January 27, and went up to 103.8 the next day, but dropped rapidly to normal by January 31. She had daily, and sometimes twice daily, dressings of sulfadiazine and vaseline gauze. The wounds healed nicely without infection, and without significant scarring.

Case 5: L. M. A., five-year-old colored girl who received injuries from burning clothes when she was playing with matches on March 25, 1942, was admitted for treatment. The burns involved a large part of the abdomen, and the inner surfaces of both thighs, in addition to a burn of the right wrist. Altogether about 25 per cent of the body surface was burned. The areas on the abdomen were of second degree, and on the thighs, of third degree variety. Her temperature never rose above 100.4, and that was on the second and third days. The hemoglobin remained at 95-100 per cent and the urine showed a one plus albumen, which disappeared by the third day.

Her burns were debrided as usual and then sprayed according to the suggested routine. On March 28, boric acid compresses were started on the thigh burns because of mild infection resulting from constant picking at the eschar by the patient. She needed no narcotic and no intravenous fluids were given. She had moderate pain when the coagulum was removed from the third degree burns. The abdomen was completely healed before she left on April 17, but the legs were still granulating and had to have dressings applied. On April 21, about half of the thigh wound surface had epithelized, and the rest may need grafting.

Case 6: B. H., a ten-year-old girl whose clothing caught fire on burning brush on April 18, had third degree burns of 65 per cent of her body. The trunk, both anteriorly and posteriorly, was completely involved, and both thighs and portions of both arms were burned. Her condition was critical from the beginning. Large doses of morphine were given for pain and then a debridement was done.

The sulfadiazine sprays were then begun, and treatment for shock instituted. The blood pressure never registered from the beginning. The hematacrit reading was 67 per cent, white blood count 56,500, and hemoglobin 100 to 102. Plasma was given in quantities sufficient to bring the hematacrit down to 48 per cent by the following day. Glucose and citrated blood were also given on the day after admission. Suprarenal cortex in 1 cc. subcutaneous doses had little if any effect. The kidneys failed to function and the patient died about 36 hours after admission. No observation on the efficacy of sulfadiazine can be made on a case of this kind. A good eschar had formed within the first eight hours, and very little fluid escaped from the burn surface. There was such a complete collapse of the peripheral vessels that fewer blood studies than desired were done.

Case 7: B. F., a 42-year-old man, admitted on November 19, 1941, was burned from a powder explosion at the powder plant. He had first and second degree burns of his face, both hands, and wrists, neck and both ears. He was not in shock, but was given first aid and brought to the hospital. Started on sulfadiazine sprays in the usual manner, and required only a few hypodermics of morphine on the ensuing days. His blood pressure on admission was 126/78, and laboratory studies were normal. Sulfadiazine concentration never showed more than a trace. His temperature went to 102 on November 22, from a respiratory infection, but dropped promptly to normal with sulfathiazole by mouth. There was practically no evidence of infection, and the face healed before he left the hospital on November 29. The hands developed a good deal of edema, but this subsided before discharge, and healing was well under way, except for one finger which was still swollen and stiff when he left. This patient was anxious to be near his home, so he was transferred to a hospital in another city, with vaseline gauze dressings on his hands, on November 29. The final result is therefore not known, but, from the appearance when he left, it is reasonable to suppose that he would not have more than slight contracture of one of his fingers. This patient said in regard to pain that the sprays "stung" for a while, and then made the burns feel much better.

Case 8: C. T., a 33-year-old man, admitted on April 20, 1942, was burned on the face, ears, and both hands from a kerosene flash. They were mostly first degree, but partly second degree burns. Morphine necessary only once. A few blisters were removed, but otherwise debridement was not necessary. Aside from a hemoglobin of 105, laboratory findings were normal. Blood pressure was 128/70 and his physical examination revealed nothing of importance besides the injuries. The usual sulfadiazine sprays were used and the intact epithelium began to have a dusky gray appearance on the first day. Moderate swelling of the face and hands subsided on third day. This patient states that the solution eases pain after an initial period of burning and stinging. He is still in the hospital and it is too soon to estimate the final results.

Case 9: C. R., a 30-year-old man, was admitted on April 20, 1942, for first and second degree burns of face and both arms from the wrist to the middle of the upper arms. They were caused by a flash back from kerosene. Morphine was necessary once on the day of admission, twice the next day and once the third day. Sulfadiazine sprays have been used, with eschar formation on the second degree areas on the second day and the production of grayish discoloration of the remaining epidermis in other areas. He states that the solution burns for awhile and then causes relief. His blood pressure was 140/80 in the popliteal artery on admission. Urine was negative except for a few blood cells and blood examination showed a r.b.c. of 5,130,000 and hemoglobin of 102 per cent. There were 13,800 w.b.c. No measures, other than opiates, were used to combat latent shock, as the patient seemed in excellent condition. This patient is still in the hospital and it is too soon to estimate his final result, but so far his progress has been most satisfactory.

SUMMARY

1. The importance of a simple and effective treatment of burns is emphasized.

2. The general treatment of major and minor burns, including first aid therapy, is discussed.

3. Various procedures of local treatment are outlined, particular attention being given to the use of sulfadiazine solutions and ointments.

4. Case reports of burns of varying intensity are reviewed briefly.

CONCLUSION

The satisfactory handling of burns demands intelligent first aid, insistence on adequate control of shock with the present means at our disposal, which include administration of suprarenal cortex and restoration of fluids by plasma infusion, and blood transfusion when indicated; and control of anoxia by oxygen. Infection must be avoided if possible by careful debridement and use of proper local agents. Among the newest and most valuable of these is sulfadiazine dissolved in triethanolamine. This produces a pliable translucent eschar, with anesthetic and bacteriostatic properties. It is safe to use, even around the eyes, and general toxic reactions are rare. Loss of tissue fluids is reduced to a minimum when the coagulum forms. The ultimate healing is characterized by a reduction in scar tissue, and the period of epithelization is undoubtedly shortened by this material. The excellent results obtained by Pickrell, Adams, and others in its use justifies a more universal trial, and it is probable that sulfonamide therapy will add another splendid result to is long list of successes.

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THE INTER-RELATIONSHIP OF DENTISTRY AND OTOLARYNGOLOGY*

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A paper covering the inter-relationship of dentistry and otolaryngology, qualifying all statements, would require a complete treatise on both subjects. This presentation will be limited to a correlation showing the relationship existing between these specialties as related to inflammatory symptoms, stressing the relationship to pain. Mention will also be made regarding hemorrhagic conditions and the relationship of otolaryngology to orthodontia.

The practices of dentistry and otolaryngology are specialities dealing with a very small, complex, functional, portion of the human body. Both are concerned with the relationship of infirmities as related to the whole body mechanism. The teeth and the nose and throat are adjacent structures, thus making our work closely related and overlapping. Indeed, at times it takes a thorough study by both to determine who can cure the patient of his symptoms. Likewise, the dentist and the nose and throat specialist have the same motive: the prevention, alleviation, and cure of infirmities.

Education of the public has done much to promote preventive care. However, the large majority of our patients still present themselves because of

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symptoms. Analysis discloses that these usually are primarily of an inflammatory nature, i. e., redness, swelling, heat and pain, frequently resulting secondarily in disordered function and muscular spasm. Bleeding is another important symptom. Patients are apprehensive about bleeding and present themselves early to determine its cause and correction.

The diagnosis of a patient's condition requires an analysis of the subjective and objective findings to determine the cause. The treatment depends upon these findings. Pain is the most annoying and confusing of these symptoms to interpret. Pain indicates irritation but is not always localized to the site of the irritant. It may be referred. The area to which the pain is referred receives its sensory nerve supply from the same spinal segment or ganglion as does the involved area. Pain or the absence of pain must be considered with the other symptoms and signs in making a correct diagnosis.

A few of the nose and throat conditions closely related to dentistry, with pain as a frequent major subjective symptom, are as follows:

1. Maxillary sinusitis usually follows an acute infection of the nose. The symptoms of acute maxillary sinusitis are pain over the antrum, pain in the canine and upper premolar teeth, lethargy, headaches, and a purulent discharge from the nostril. The diagnosis is made by the history, frequently by eliciting pain upon pressure over the antrum, transillumination, and x-ray. Maxillary sinusitis may result by extension of infection from a tooth. The canine and upper premolar tooth roots are separated from the maxillary sinus floor by a very thin layer of bone. The possibilities are as follows: The tooth may abscess without rupture; the abscess may slowly rupture the bone, being walled off here to form a circumscribed sinusitis; or the force of the rupture may spread the infection to the sinus cavity, causing empyema. The removal of a tooth may leave a fistulous tract which is always a potential maxillary sinusitis. The mouth contains both aerobic and anaerobic organisms. When a fistulous tract is present, a method of cleansing the mouth should be carried out to prevent infection of the maxillary sinus from the mouth. Edema and tenderness of the soft tissues over the maxillary sinus is usually due to a cellulitis arising from infection around the root of a tooth, and not from infection within the walled off maxillary sinus.

The management of maxillary sinusitis depends upon the cause and duration of the infection. Sinusitis resulting from nasal infection will not be further considered except as related to tooth pain. Maxillary sinusitis resulting from an abscessed tooth requires the tooth's removal, and all bone and tooth root fragments must be carefully curetted. The infected sinus with a fistulous opening should never be irrigated from below. The proper care requires irrigation from above through the nostril at regular intervals of four or five days, and the use of a mouth wash to eliminate infection which might extend through the fistulous opening and reinfect the sinus. The purpose of the treatment is to keep the sinus clean from above and to close the fistulous opening as quickly as possible. The fistulous opening might close spontaneously if it is small. After treatment for two or three weeks an idea may be obtained about the result. If the fistulous tract does not close spontaneously a plastic mucosal flap can be dissected out and sutured into place covering the tooth socket by a wide margin. If an abscessed tooth or an infected tooth socket has infected the maxillary sinus wall over a long period of time—usually after two months—the mucosa lining the sinus becomes thickened. Then irrigations will only wash off the surface of the thickened and infected mucosa. These treatments are of little avail. An operation designed to remove the infected mucosa is the only means of obtaining a complete cure. This is a Caldwell-Luc operation, which is carried out through an opening made in the canine fossa. The thickened mucosa is completely removed from the antrum and an opening is made beneath the inferior turbinate into the nose. The operative site is closed by sutures. The fistulous tract is carefully curetted and closed during the operation by the oral surgeon. The maxillary sinus is kept clean from above until healthy mucosa regenerates from the nose to cover the sinus cavity. This procedure is successful in a very high percentage of cases.

2. Fractures of the face are quite frequent today, resulting from automobile accidents and industrial hazards. The typical type represents a linear fracture of the maxilla, extending through the hard palate, the alveolar arch in the region of the canine tooth, the maxillary sinus, and the floor of the orbit to the fronto-zygomatic suture. In addition the nasal bone and mandible may be frac-

tured. If the fracture extends to involve the cranial vault there is danger of intracranial infection. Bleeding from the ears or x-rays showing a fracture of the cranial vault would indicate the use of a sulfonamide drug. The reallignment of the teeth, the setting of the mandible, and the subsequent care of the mouth is a dental problem. The care of a depressed fracture of the maxillary sinus is a nose and throat problem which requires its reduction by a modified Caldwell-Luc operation. An atypical injury would result from crushing blows and would require treatment depending upon the extent of the damage done.

3. Temporo-mandibular dyscrasias have been brought to the attention of the dentists and nose and throat specialists frequently in the recent literature.[1]

(a) It was found that the absence of teeth throws the temporo-mandible joint out of alignment, causing disarticulation with resultant wearing of the joint, pain, and dysfunction. In addition, the muscles of the pharyngeal wall whose action is to open the eustachian tube mouth are shortened between their origin and insertion, resulting in tubal catarrh which causes deafness and pain. The correction of temporo-mandibular dyscrasia is accomplished by correcting the bite of the teeth.

(b) The temporo-mandibular joint is involved more frequently in rheumatoid arthritis than any other joint.[2] There is tenderness and swelling of the joint, and symptoms of pain in front of the ear, usually upon moving the mandible in talking or chewing. The treatment is carried out by the removal of toxic foci of infection, the correction of the bite, the use of salicylates, and systemic care.

4. Ear conditions are quite painful, and may be confused with a molar tooth involvement. They are as follows:

(a) External otitis media causes a swelling of the external ear canal with pain and tenderness usually localized to this area. Pain or manipulating the lobe of the ear is usually pathognomonic of an external otitis.

(b) Acute and chronic catarrhal otitis media give symptoms of pain deep in the ear region usually following an upper respiratory infection or other condition causing closure of the eustachian tubes. Objectively, the drum is slightly discolored and retracted with some loss of hearing for the low tones.

(c) An acute purulent otitis media usually results from extension of infection through the eustachian tube from the nasopharynx, and is characterized by a throbbing pain in the ear, an elevation of temperature, and loss of hearing. The ear drum is always completely discolored. In the advanced stages the drum is bulging or ruptured with a purulent discharge pouring through the drum. The temperature in acute otitis media gives an excellent indication of its severity, and in an uncomplicated case after spontaneous rupture of the drum or myringotomy the temperature is normal. An exception occurs in a very virulent infection or in a case with a low resistance. Here the temperature may be sub-normal. Insufficient drainage or a mastoiditis is usually accompanied by a temperature elevation but we must be constantly on the alert for mastoiditis characterized by an abnormal temperature. A culture of the ear discharge is of value in determining the type of organism present and the sulfonamide to use. After two weeks a discharging ear is always suspicious of mastoiditis. X-rays are very valuable in diagnosis.

5. Tonsil infection is a cause for pain which may be confused with tooth pain.

(a) Acute tonsillitis and extensive chronic tonsilitis cause pain in the throat at times referred to the ear and the neck on the same side. When the pain is referred to the neck we can often palpate enlarged cervical glands at the angle of the jaw extending downward into the neck.

(b) A peritonsillar abscess, or quinsy, is a result of chronic tonsillitis with rupture of the purulent material into the fascia space behind the tonsil. It is characterized by intense pain in the throat, often extending to the ear and jaw on the same side. The patient cannot open his mouth due to the extreme swelling. Eating, talking, and swallowing are extremely difficult. The diagnosis can be confused with the abscess of a third molar tooth. However, the history of its development with tonsilitis and the absence of tooth cavities is of great assistance in making a diagnosis. Treatment by incision and drainage give dramatic relief. After the swelling has subsided the probability of an abscessed tooth can usually be ruled out.

6. If we exclude tic douloureux, primary neuritis of the trigeminal is rare, although it may occur secondarily to disease processes at the base of the skull.[3]

(a) Tic douloureux is a paroxysmal excruciating, radiating pain which comes on instantaneously and lasts for only a few seconds. It is limited to the distribution of the trigeminal nerve, usually involving the second division, but the first or third may be involved. The patient is afraid to talk, eat, wash or touch the face for fear of precipitating an attack. The teeth, nasal sinuses, and bones are thought to be causes involved in a mild neuritic process. A careful examination is made for trouble, supplemented by x-rays of the sinuses and teeth. All faulty teeth and tooth fragments are removed. Temporary relief may be obtained by the use of trichlorethylene inhalations. The treatment is for the most part surgical, requiring injection or section of the nerve surgically.

(b) There are many cases of atypical facial neuralgia, which, unlike tic douloureux, present atypical symptoms and distribution.[4] The pains are not sharply neuralgic, but dull, burning or aching; not in the course of the nerves, but in the orbit, cheek, head, and neck; they last for hours, days, and months, and do not respond to treatment. They probably are sympathetic and vasomotor in origin. Some believe they are psychogenic.

7. Benign and malignant tumors of the ear, nose, throat and teeth are occasionally seen in our specialties. A few will be described as follows:

(a) A benign tumor in the nasopharynx causes enlargement and dysfunction. Certain types act as malignant tumors due to the rapidity of growth and pressure necrosis.

(b) The malignant tumor of the nasopharynx originates in Rosemuller's fossa and is characterized by a sensation of fullness; difficulty in hearing due to closure of the eustachian opening; pain in the ear on the same side of the face; occasionally bleeding; and later paralysis involving the cranial nerves, usually the sixth, third, fourth and fifth nerves. When advanced the patient dies due to intracranial extension. The treatment of benign types requires their removal. The malignant types are treated by x-ray and radium.

(c) Tumors of the tonsils may be benign or malignant. A biopsy determines the method of treatment. If the tumor is broken down with extension ulceration it is often difficult to make a diagnosis of malignancy by inspection alone. Syphilis, Vincent's infection, and tuberculosis may be causative factors. Frequently it is necessary to take repeated biopsies in order to make a diagnosis of malignancy. At times there may be an over-lapping where all of the conditions may be present in the same case.

(d) In the mouth we find leucoplakia as a white, hard, smooth area involving the tongue or buccal mucosa. This is always a precancerous condition, aggravated by faulty dental hygiene, the use of alcohol, and tobacco. The treatment requires the correction of the teeth and abstinence from the use of alcohol and tobacco. Vitamin therapy may prove useful, but a complete surgical removal may be necessary.

(e) Cancer of the tongue demands surgical removal.

(f) There is a tumor developing within the alveolar border of the jaw from the para-dental epithelial remains of the enamel organ, an adamantinoma, which is a slow growing malignancy requiring surgical removal and deep x-ray therapy.

(g) Tumors of the external ear are usually malignant, causing a blockage, pain, and bleeding from the ear. They are treated by x-ray after biopsy study.

(h) Tumors, likewise, may involve the bones arising from any location.

8. Painful swellings frequently occur about the face.

(a) The salivary glands, namely, the parotid, sub-maxillary, and sub-lingual may be involved by infection, stones, ranulae, or tumors. Infection may extend to the glands via the salivary ducts from the mouth. An enlargement, pain, and tenderness with an elevation of temperature follows. Mumps usually occurs during childhood and is probably caused by a filtrable virus infection. The diagnosis is made by the absence of infection in the mouth and the history of contact with a known case or by its occurrence during an epidemic. Stones may occlude the ducts, causing an increase in swelling of the glands following the ingestion of foods. The swelling subsides

after eating. A stone may be passed spontaneously or have to be removed surgically. A ranula is a cystic tumor beneath the tongue, due to obstruction and dilatation of the maxillary or sublingual duct. It is soft and fluctuant. It is treated by removal of the obstruction and surgical removal of the dilatation later if necessary. Tumors may arise in the sub-maxillary ducts and glands, being either benign or malignant. Like tumors elsewhere, the diagnosis is made by a biopsy study. They are treated surgically or by x-ray, as indicated by the findings.

(b) A mastoid infection may perforate to the exterior, forming an abscess under the periosteum, called a sub-periosteal abscess. This is usually located over the mastoid but may form beneath the mastoid tip at the angle of the jaw, being termed a Bezold abscess. This enlargement may confuse the examiner if he is not alert to its possibility.

(c) Ludwig's angina[5] is a painful swelling beneath the tongue due to a cellulitis about the submaxillary or sub-lingual glands, which spreads in the planes of connective tissue to the sub-lingual region. It is a serious condition because it may extend downward into the mediastinum. It is characterized by a painful swelling in the floor of the mouth, which pushes the tongue upward, preventing closure of the mouth. The temperature is elevated and the patient is dyspneic. The cause may be delayed development of a third molar tooth, necrosis of the tooth and alveolar process taking place, and an abscess forming. The treatment is surgical drainage beneath the chin or through the floor of the mouth.

(d) Hodgkin's disease is characterized by a painless progressive enlargement of lymph nodes, often accompanied by fever, and in the late stages by cachexia and anemia.[6] The onset of the disease is occasionally preceded or accompanied by infections about the teeth or tonsils. Characteristically the cervical lymph nodes enlarge. The treatment is medical and by x-ray therapy.

(e) Tuberculous cervical lymph nodes[6] may simulate Hodgkin's disease. The diagnosis is made from the history, physical findings, tuberculin tests, pain over the glands, and x-rays revealing calcification of the glands.

(f) Lymphocytic leukemia[6] may cause enlarged cervical lymph-glands. It is diagnosed by a study of blood smears. The treatment is medical.

(g) Acute infectious mononucleosis[7] is a disease characterized by an elevation of temperature, acutely inflamed tonsils and enlarged tender cervical lymph nodes. The diagnosis is made by a study of blood smears. It disappears spontaneously in about two weeks.

(h) Lymphosarcoma may simulate Hodgkin's disease.[6] When it affects the cervical and submental lymph nodes the tonsils are frequently involved and greatly enlarged. The diagnosis is made by a histologic study of the lymph nodes.

(i) Syphilitic gumma[6] may arise from the cervical region. A positive Wassermann aids in the diagnosis.

9. Painful infections of interest to us include:

(a) Vincent's angina[8] which is an infection caused by symbiosis of a spirochete and a fusiform bacillus which flourishes in the mouth due to a lack of oxygen. It causes inflammation of the oral mucosa, and frequently deep ulcers in the mouth, tonsils, and pharynx. The diagnosis is made by the clinical appearance and a smear obtained from the affected area stained to show the presence of fusiform bacilli and spirochetes.

(b) Cellulitis of the face may result by a direct extension from an abscessed tooth or an infected tooth socket. As stressed before, this condition will not arise from sinusitis. Erysipelas of the face represents itself as a very red tender skin involvement extending to the hair line where it is sharply demarcated. The diagnosis is made by the clinical appearance, the high temperature, and extreme toxicity. It is treated by the sulfonamides.

(c) Agranulocytosis[9] is a blood dyscrasia characterized by a depression of granulocytes in the blood. It is known to be caused by barbiturates, sulfanilamide, and other drugs, used over a long period of time. Probably there is an allergic factor, although the exact mechanism of causation is unknown. Initially the condition begins with a temperature, sore throat, and diffculty in swallowing. When advanced, ulceration and necrosis occur of the mouth, pharynx, and larynx. The treatment is medical.

Syphilis manifects itself when congenital as Hutchinson's teeth, a saddle nose and impairment of hearing of varying degree, characterized by a loss for high tones. In the acquired type there is

frequently an initial chancre of the lip, mouth, tonsils, or pharynx. The secondary state is manifested by macules over the oral mucosa with usually a complaint of sore throat. In the tertiary or late syphilis the patient complains of a sore throat of many weeks' duration. The negroes entering the Medical College of Virginia Hospital Clinic with a complaint of chronic sore throat had a routine Wassermann test. About half of them were positive. In congenital and acquired late syphilis an anterior perforation of the septum is quite characteristic. Obscure pains and neuralgias, and unexplained ulcers of the hard and soft palate and the tongue are frequently luetic.

Hemorrhagic diseases[10] involving the nose and throat include scurvy, purpura and hemophilia. Scurvy is caused by a deficiency of vitamin C; when advanced it is characterized by bleeding, tender gums, loose teeth, and pain. It is treated by the administration of vitamin C. Purpura is a condition characterized by hemorrhages beneath the skin and mucosa. It usually involves the gums and oral mucosa. A faulty bleeding time is the cause. The treatment is medical. Hemophilia is an hereditary condition which occurs only in males, being passed on through females. It is characterized by hemorrhage after trauma. Even small cuts bleed incessantly and endanger life. The treatment is medical.

Malocclusion may result from mouth breathing, thumb sucking, or similar habits. The resulting ugly mouth deforms the face. The individual is handicapped by the physical deformity and may develop an inferiority complex resulting in a poor social adjustment. A child with large adenoids breathes through the mouth. A high palatine arch develops, the teeth protrude; malocclusion and facial deformity follow. The removal of adenoids and large tonsils, when indicated, is recommended by the orthodontist as one of the corrective measures for these cases.

The relationship existing between dentistry and otolaryngology is very intricate. A broader perspective may be secured by an exchange of view points.

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INTRAVENOUS ANESTHESIA IN OBSTETRICS*

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The short acting barbiturate, pentothal sodium, because of its ease of intravenous administration and the smooth and quick induction of anesthesia with rapid recovery, seems particularly applicable to obstetrics. The successful use of this agent in many clinics for a myriad of surgical procedures, and the few though favorable reports of its employment in obstetrics, prompted this study.

Evipal soluble had been tried but abandoned as difficulty was encountered in gauging the depth of

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anesthesia in the patients who received analgesic drugs during labor.

The earliest recorded use of intravenous anesthesia appears to be the report of Pirogoff and Von Flour in 1847. They used ether, but because of its high mortality it was abandoned. Several other agents have been used but seem to have enjoyed only a brief and local popularity. In 1872 Ore reported on the intravenous use of chloral. In the early years of the twentieth century a remarkable series was published by Federow who used hedonal. Some years later Gwathmey used ether in Ringer's solution and subsequently reported on trichlorisopropyl alcohol given intravenously.

The barbituric acid compounds were introduced as intravenous anesthetics in 1929 when sodium amytal was used. Post-operative restlessness, prolonged recovery, and inadequate relaxation led to its discontinuation. Tabern and Volwiler developed pentothal sodium which was first used clinically by Lundy at Mayo Clinic in 1934. Since then, some 54,851 cases have been reported in which this drug was used with almost universal praise of its properties; 14 deaths are recorded by these authors, 7 of which might be attributed to the anesthetic.

This report deals with our experience in using pentothal sodium intravenously in 100 obstetrical cases. No attempt was made to select the patients for intravenous anesthesia, though, at first, it was given timidly to patients who had received heavy sedation during the first stage of labor. With increasing familiarity with the drug, it was realized that this was not a contra-indication. Fetal apnea was anticipated because of the known respiratory depression of the drug. Remarkably little of this was encountered.

Employing a 2 5 per cent solution of pentothal sodium intravenously for anesthesia, the following obstetrical operations have been done:

Spontaneous delivery, with or without episiotomy	6
Low forceps extraction, with or without episiotomy	48
Mid forceps extraction, with or without episiotomy	25
Internal podalic version and extraction	6
Breech extraction	5
Hysterotomy (early and late)	2
Dilatation and curettage	9

The maximum dose necessary was 1500 mg., the minimum 175 mg., and the average was 625 mg.

During the first stage of labor, analgesia was obtained with a combination of morphine, hyoscine, sodium amytal, and rectal ether. These drugs were given as the needs of the individual patient seemed to indicate, and many of the patients received all of them and in some instnaces the drugs were readministered if needed.

When the cervix was judged to be fully dilated, preparation was made for delivery; pentothal sodium was given intravenously. A perineal nerve block was performed with 1 per cent procaine, and as the head was delivered, the intravenous injection was discontinued.

For dilatation and curettage pentothal sodium was the only drug used, except that a preoperative hypodermic of atropine was given to abolish overactivity of the parasympathetic nerves. In the Cesarean section cases, the abdominal wall was infiltrated with procaine and the pentothal administration begun just before opening the uterus. During closure of the abdomen, the needle was withdrawn from the vein.

In this series of 100 cases, there were no maternal deaths, nor any complication due to the anesthetic. There were 6 instances of puerperal morbidity, but these patients recovered promptly and were able to leave the hospital within ten days. The usual criteria of temperature of 100.4 F. on two successive days was the index of morbidity.

There was no technical difficulty which could be ascribed to the anesthetic. We believe, as do others, that it is advisable to administer oxygen, since the depression of respiratory depth produces anoxemia and sometimes cyanosis. A patent airway must be maintained by holding the patient's jaw forward or by mechanical aid if needed.

There were two fetal deaths in this group. The first was a four and one-quarter pound twin, whose mother was moderately toxic and in labor prematurely. The second fetal death occurred in a patient who was referred after eighty hours of labor. The fetal heart was not audible at the time of admission. With the exception of these two infants, no fetal apnea of any consequence was encountered. Many of the children breathed immediately with no attention. In some, it was necessary to aspirate mucus from the pharynx, and in a few instances, oxygen was also administered.

SUMMARY AND CONCLUSIONS.

1. 100 obstetrical cases are reported in which pentothal sodium was given intravenously as the

general anesthetic agent.

2. There were no maternal complications due to the anesthesia.

3. There were two fetal deaths—one a premature infant, while the second was dead in utero on admission to the hospital.

4. Fetal apnea was conspicuous by its absence.

5. The ease of induction of anesthesia and the smooth recovery without headache and nausea have been very impressive.

6. There was no appreciable change in pulse or in respiratory rate, though a definite change in depth of respiration was produced. Cyanosis occasionally occurred; it was quickly corrected by oxygen administration.

7. Pentothal sodium has been very satisfactory in our hands and is a distinct adjunct to the obstetrician's method of relieving pain.

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Medical Arts Building.

THROMBOSIS OF CAVERNOUS SINUS
Report of a Case*

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The systemic signs and symptoms of infectious thrombosis of the large venous sinuses are more or less similar regardless of the sinus involved.

Proptosis and ocular edema are the first local signs of the infective type of thrombosis of the cavernous sinus. Papilledema is not invariably present in cavernous sinus thrombosis, but when it does occur it is one of the outstanding diagnostic local signs. The diagnosis may be confused with an orbital infection, but, unless the cellulitis of the orbit is secondary, papilledema is not present in an orbital infection. The etiological factor is usually the extension of the contiguous infection to the sinus. Cavernous sinus thrombosis is usually unilateral, but some authorities estimate a very high percentage of bilateral involvement. The connection that exists between the two sinuses makes it so easy for the infection to travel, that the uninvolved sinus is most vulnerable at all times.

The rarity of recovery and the infrequency of the condition make it of sufficient importance for a report of this case.

Another interesting point in this presentation is that the pathological report on the eye removed confirmed the diagnosis. In looking up the literature on this subject, I have been unable to find a case report of unilateral cavernous sinus thrombosis, with recovery, in which a pathological report of the enucleated eye was made.

Mrs. E. H., aged thirty-two, was admitted to St. Vincent's Hospital, Norfolk, Va., December 23, 1938, with a history of having picked a small pimple on the nose a few days before admission. The infection had spread rapidly and soon thereafter she became very ill and toxic. The entire face was red and swollen and had the appearance of erysipelas. The upper lip was swollen and hard with a carbuncle-like formation on the right side, the swelling extending outward on the right jaw and upward around the right orbit. The right eye ground was normal. No cervical rigidity, reflexes normal. In the right axilla and base were many coarse and medium râles. Abdomen flat and soft.

Laboratory Report.—Red count 4,310,000; leuco-

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cytes 18,000; polymorphonuclears 87 per cent; small lymphocytes 8 per cent; transitional 2 per cent; and hemoglobin 85 per cent. Wassermann was negative. December 28, the blood culture was positive, staphylococcus aureus. Culture made from the initial infection was staphylococcus aureus.

The treatment consisted of sulfanilamide with sodium bicarbonate, X-ray therapy of face, and several blood transfusions. The sulfanilamide and X-ray therapy were discontinued on December 26.

On December 31 I saw this patient for the first time (Fig. 1). There was considerable proptosis of

Fig. 1.—Photograph of patient before operation.

the right eye with edema of upper and lower lids. The movements of the right eye were markedly limited in all directions. The fundus examination showed a papilledema of 3 diopters. The ophthalmoscopic examination of the left eye showed no pathology and very slight swelling of the eyelids. Diploplia was an annoying symptom. The papilledema gradually increased and multiple retinal hemorrhages occurred in the periphery of the fundus. The patient developed a total ophthalmoplegia with pupil widely dilated, and could only count fingers with the right eye.

On January 11 the proptosis had increased, the papilledema and retinal hemorrhages had increased, and the vision in the right eye was only light perception. The retinal hemorrhages involved the entire periphery of the fundus. The edema of the lids and conjunctiva had increased. The left eye was normal with no edema of eyelids.

On January 16 the pain back of the right eye became so severe that no relief could be given this patient. The eye was more proptosed, with no perception of light, and the pupil widely dilated. The

Fig. 2—(× 30). Photomicrograph of a section through the optic nerve-head.

temperature was 99 degrees F., pulse 48, and respiration 20.

Laboratory Report.—Hemoglobin 70 per cent; red count 3,520,000; leucocytes 7,500; polymorphonuclears 72 per cent; small lymphocytes 22 per cent; large lymphocytes 3 per cent; transitional 1 per cent; eosinophiles 2 per cent; n.p.n. 30 mg.

Fig. 4.—(× 400). Photomicrograph of a section through the optic nerve-head.

Fig. 3.—(× 100). Photomicrograph of a section through the optic nerve-head.

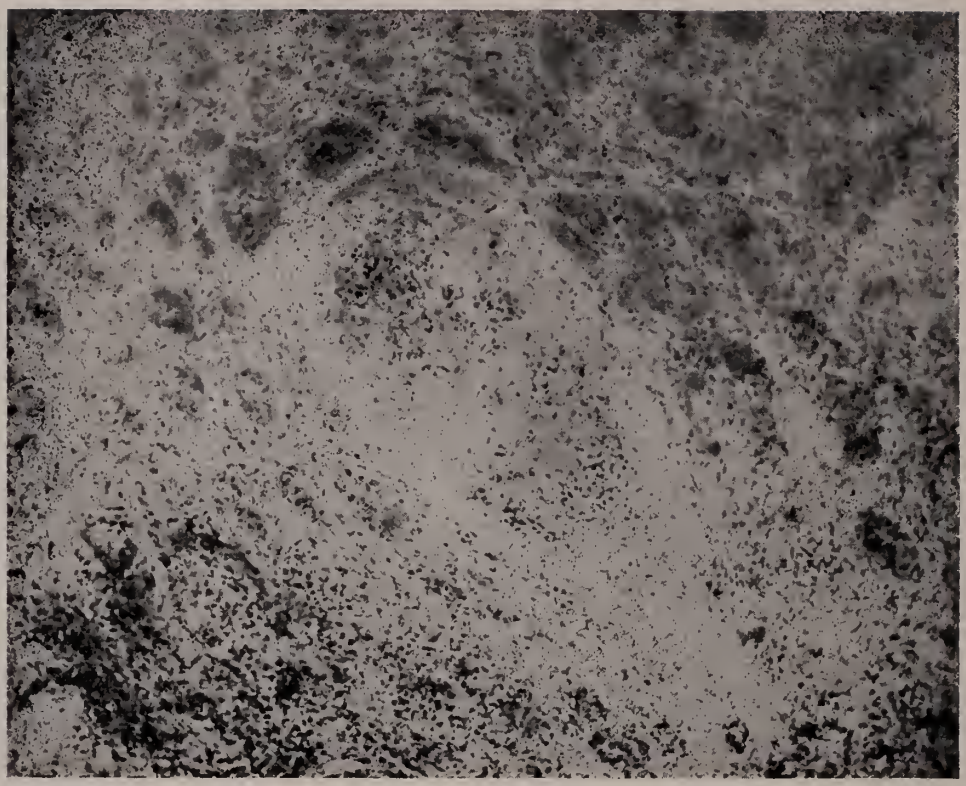

Fig. 6.—(× 240). Photomicrograph of a cross section of optic nerve-head. U. S. Army Medical Museum Negative No. 71084.

Fig. 5.—(× 240). Photomicrograph of a cross section of optic nerve-head. U. S. Army Medical Museum Negative No. 71083.

Under ether anesthesia the right eye was enucleated. After the eye was removed a small indurated mass could be felt at the inner extremity of the sphenoidal fissure, which was the ophthalmic vein just before terminating in the cavernous sinus. No attempt was made at this time to open this, but a strip of gauze was passed down to the mass for drainage, and fortunately it ruptured spontaneously the following day. The pain was relieved and there was purulent discharge for three weeks. The temperature fluctuated between 100-104 degrees during this time.

Several blood transfusions were given after the operation and bacteriophage was injected in the orbit at the operation and several times thereafter.

Fig. 7.—Photograph of patient six months after operation.

This patient has entirely recovered and now makes her livelihood as a seamstress (Fig. 7). The vision in her left eye with minus 1.00 sphere is 20/15.

The eye that was removed was sent to the Army Medical Museum, Washington, D. C., and the following report of Dr. Elbert DeCoursey was sent to me by Lieut. Col. J. E. Ash:

Gross.—The cornea is clear and the pupil slightly dilated. There is some thinning of the sclera at the equator and thickening of the sclera posteriorly. The vitreous is cloudy. The retina is thickened posteriorly.

Microscopic.—The cornea, iris, ciliary body, and lens show little change except for slight posterior synechia and slight pigmentation of the filtrated meshwork of the anterior chamber. The optic nerve is the seat of a tremendous inflammatory cell infiltration with resulting necrosis. There is septic thrombosis of the central vein which extends into some tributaries. The nerve head is swollen and there is perineural fibrinous exudate in the external plexiform layer and subretinal albuminous and serous exudate. Round cells infiltrate the posterior portion of the choroid. Leucocytes extend from the optic nerve for a moderate distance into the retina. Away from the nerve head there are some small areas of albuminous exudate in the retina. Gram positive cocci are demonstrated in the optic nerve. A special cross section through the optic nerve at the edge of the bulb shows thrombosis of the artery as well as the vein. The meninges are also heavily infiltrated with leucocytes and show areas of necrosis.

Diagnosis.—Optic neuritis, staphylococcus aureus, secondary to cavernous sinus thrombosis.

I wish to express my appreciation to Drs. H. G. Ashburn and W. B. Martin for giving me the opportunity to present this case.

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GASTROSCHISIS
With Case Report*

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Waynesboro, Virginia.

Gastroschisis is a term derived from the Greek words meaning "belly-cleft". It is used to describe a congenital malformation in which the abdomen remains open. In other words, in true gastroschisis there is an absence of the continuity of tissue in the abdominal wall, which permits direct communication between the abdominal cavity and the outside. This is not to be confused with the congenital malformation of umbilical or ventral hernia, in which the abdominal viscera may be lying outside of the abdominal cavity but are contained within a peritoneal sac. Both conditions have been referred to in the literature as "eventration", but there is a distinct and important difference between the two, in that, in gastroschisis there is not only the physical defect with its attending difficulties, but also the exposure and contamination of the peritoneal cavity with the chance of almost inevitable acute peritonitis. Gastroschisis has been subdivided into several other localizing terms to indicate the area of the abdomen in which it occurs, but, suffice it to say here, the defect may occur in any area of the abdomen, from the xiphoid process to the symphysis pubis but usually near the midline.

As far back as 1547 a case of eventration was reported in the literature, but this turned out to be a ventral hernia with the viscera covered by a peritoneal sac. There were two cases reported in 1878, both from England. Ogle[1] reported the case of a premature male infant (eight months) born with a congenital defect in its abdominal wall through which the stomach, duodenum and all of the intestines were protruding and lying outside of the peritoneum. This child lived only a few hours after birth. The second case in 1878 was reported by William Fear[2]. This was a full-term female baby who had a fissure in the abdominal wall about one and one-half inches long near the "abdominal ring". There was eventration of the pyloric end of the stomach, the small and large bowel. In this case the organs were replaced in the abdominal cavity; the wound was closed by "pulling upward on the umbilical cord making a cone shaped section in the abdominal wall which was then encircled around its base with a skein of cord", including a small area of skin, and tied tightly. The wound healed and the child survived with no difficulties. Incidently, this was the only case I found reported in the literature which lived, although there are probably others which have not been reported.

Others cases of gastroschisis are reported by Wolfe[3], Hedblom[4], Pribram[5], and Polayes[6], but these cases were all accompanied by other abnormalities, and are not of interest for this reason.

Three more recent cases are reported which are very similar to our case. One case, reported by Hyde,[10] was that of a full-term female baby. It was normal in all respects except for eventration of stomach, small and large bowels and urinary bladder. The abdominal opening extended from one inch below xiphoid process to symphysis pubis. This child lived only sixteen hours, and apparently no attempt was made to repair the defect.

Dry[7] describes the case of a female infant which weighed six pounds, fifteen and three-fourth ounces, and was normal in every respect except for gastroschisis. There was eventration of the liver, stomach, small and large intestines, through an opening in the abdominal wall which measured 10 cm. x 6 cm. The umbilical cord was inserted laterally to the left portion of the abdominal opening in the fetus. A surgical procedure was done; the organs were placed in the abdominal cavity and the wound was closed but the infant died the same day. The third case was that of Bernstein,[8] who reported that the infant weighed five pounds at birth and cried lustily without resuscitation. It appeared normal in all respects except that there was a circular defect one inch in diameter about one inch to the left of the umbilicus. Through this opening there protruded a cluster of bowel loops, which were cyanotic and matted inseparably by transudative adhesions into a firm mass. The stomach, the small and large intestines, the mesentery and a portion of the liver were in this mass. A cuff of peritoneum emerged from the opening but there was no sac present. Al-

*Read before the Augusta County Medical Association, May 6, 1942.

though the mass was not constricted, all feedings were vomited. The stomach was dilated and meconium was passed by rectum. The condition was treated by applying hot wet boric acid dressings to the externalized viscera, and feedings by mouth. After twelve hours a long midline incision was made in the abdominal wall and an attempt was made to place the viscera in the abdominal cavity. It was unsuccessful, however, due to the fact that the abdominal cavity was smaller than the viscera that had to go into it, and the patient died.

Fourteen other cases are cited by Murphy[9] in his statistics on 1,476 cases of "Congenital Malformations", but these were compiled from death certificates and no details are given.

The surgical treatment of gastroschisis has been generally unsuccessful, first, because of the disproportion that exists between the size of the eventrated viscera and the small, relatively empty abdominal cavity. The viscera in these cases lie free in the amniotic sac and grow more rapidly because of not being confined to the small abdominal cavity. The abdominal cavity, on the other hand, being relatively empty becomes abnormally small. Secondly, the viscera are generally found to be thickened and leathery, cyanotic and injected, with adhesions matting the loops into clusters, which would naturally interfere with the normal function of the intestinal tract. Thirdly, if the child lives long enough, it is confronted with the prospect of peritonitis from the contaminated and traumatized viscera, to say nothing of the dehydration that results from vomiting, distention and fever. The prospects are indeed gloomy for any infant born with this unfortunate condition. With this dark background, we humbly submit the following report of a case of gastroschisis which was repaired and is thriving after five weeks.

CASE REPORT

Baby M., male, weight five pounds, fourteen and one-half ounces, was delivered by Dr. A. M. McLaughlin at the Waynesboro Community Hospital at 8:20 A. M. on March 30, 1942. The mother's course of pregnancy had been uneventful, except that she took thyroid ext. gr. ½ t. i. d. all during pregnancy because of a mild hypothyroidism and the fact that she had had a spontaneous abortion once before. She started in labor two weeks ahead of schedule. There was no dystocia; in fact, she was in labor only about four hours. As the baby was brought across the mother's perineum, it was noticed that there was a large reddened mass hanging from its abdomen, and it was swinging across the perineum and swabbing the mother's anal region freely. The baby cried promptly upon delivery and appeared to be normal in every respect except for the viscera hanging from its abdomen. It appeared at first as though the baby's abdomen had ruptured and eviscerated in the course of delivery. Upon closer inspection, however, it was found that there was a slit about one inch long, just to the left of the base of the umbilical cord. There was no torn peritoneum or evidence of a sac. The edges of the opening were smooth and thickened. The viscera which extended through this opening were the small and large bowel, both of which were thick and leathery, cyanotic and larger than normal. The small bowel was convoluted in a cluster, inseparable with transudative adhesions. A Meckel's diverticulum with a broad base was seen on the ileum, and a short, thick appendix projected from the cecum.

It was readily seen that it was impossible to place this mass into the abdominal cavity through the opening already there. We enlarged the opening, therefore, to about two inches in the midline, when the child was only thirty minutes old, and the viscera were placed in the abdominal cavity with some difficulty because of their size. About 1.5 gm. of sulfanilamide crystals were then sprinkled into the peritoneal cavity and the wound was closed with interrupted, through and through sutures. The umbilical cord itself was not disturbed but was tied off as in a normal case. The child's general condition remained good throughout the procedure, although its abdomen appeared rather tight. It was then placed in an incubator with instructions to give it Ringer's solution one ounce every two hours. It was put to breast after twelve hours but refused to nurse. It vomited after each feeding of Ringer's solution and had two meconium stools. Urinated scantily.

Second Day. Lost one and one-half ounce, beginning to appear dehydrated. Vomiting almost all of everything given by mouth. 175 c.c. normal saline given by hypodermoclysis.

Third Day. Weight the same. Still vomiting. Given nothing by mouth. 250 c.c. normal saline by hypodermoclysis.

Fourth Day. Started on small doses of atropine and mother's milk again. Vomiting continued. Urine showed no acetone, but 2 + albumen. Temp., 103.4°. 250 c.c. of normal saline by hypodermoclysis.

Fifth Day. Weight five pounds, twelve ounces. Still vomiting. Given nothing by mouth today. Temperature normal. 200 c.c. normal saline by hypodermoclysis.

Sixth Day. Weight five pounds, fourteen ounces (one-half ounce less than birth weight). Temperature, normal. Still vomiting. Started on prostigmine—1:4000—¼ c.c. every four hours, and lactic acid milk ½ ounce every two hours. Had two stools and retained most of feedings. No hypodermoclysis today.

After the sixth day, prostigmine was gradually decreased and lactic acid milk feedings continued, and baby retained the majority of feedings. An attempt was made to give it mother's milk again, but it vomited every feeding. It was therefore returned to lactic acid milk and gradually the feedings were increased, at longer intervals, until the sixteenth day when baby was discharged from the hospital. At time of discharge, it was retaining feedings on a schedule of two to three ounces every three hours, bowels were moving normally and wound had healed by first intention.

When last seen at the age of one month, it had gained a pound in the last two weeks and was apparently normal except for some bulging of the umbilicus, and the abdomen still has a tight distended appearance.

COMMENTS

The successful treatment of this case of gastroschisis has been attributed to the fact that, first, there was less disproportion than usual between the eventrated viscera and the abdominal cavity; second, the dehydration was combated early and frequently by the use of normal saline subcutaneously; third, the use of prostigmine seemed to help stimulate peristalsis in the bowel, after which the baby began to retain feedings for the first time; fourth, the repair of the abnormality was done early before symptoms of shock and systemic effects had taken place, and, lastly, because sulfanilamide was used in the abdominal cavity to lessen the degree of peritonitis, as evidenced by the absence of any wound infection.

SUMMARY

1. Gastroschisis is defined and differentiated from umbilical or ventral herniae.

2. A brief review of the literature.

3. The reasons for unsuccessful surgical treatment of this condition are pointed out.

4. Report of case treated successfully by surgery and comments thereon.

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RADIO IN PUBLIC HEALTH EDUCATION

DALE GROOM*,
Richmond, Virginia.

It is a singular fact that when the subject of medicine in radio broadcasting is mentioned to the average person, he thinks first of Carter's Little Liver pills, Tums, Lydia E. Pinkham, Father John, B. C.'s, Ex-Lax and Alka Seltzer. Nostrums and quacks like the late notorious Dr. Brinkley, as well as scores of chiropractors, have been on the air so consistently and for so many years, that they are almost as familiar as the NBC chimes. And it is no wonder that these nostrums and quacks do signify the medical profession to several million listeners.

Why is this so? Simply because, as one radio executive put it, "doctors are afraid they'll be accused

*The author is a member of the Senior Medical Class at Medical College of Virginia. He has completed six years in radio broadcasting-announcing, writing and production.

of violating a 2,000 year-old myth about lowering the integrity of the medical profession by going on the air. Unfortunately for the sick people, the quack doctors *do* use radio." And so do the patent medicines, together with the other exploiters whose influence has only been widened by radio, the most powerful and far reaching tool for moulding public opinion since Gutenberg's invention of movable types in the 15th century.

What is being done about it?

From the standpoint of the broadcasters, authoritative medical information, like all constructive, educational material, has always been welcomed to the air waves. The only requisite is that it be interesting and effectively presented for the listeners. Under the American system of broadcasting, all radio stations are licensed to operate "in the public interest, convenience and necessity". Proof that this pledge has been heeded must be submitted to the Federal Communications Commission by each station as its license comes up for renewal every year. It is toward this end of serving public interest that the broadcaster offers time on the air *free* to legitimate organizations for educational programs. The nostrums and quacks pay full commercial rates.

Only since 1935 has any extensive action been taken by the medical profession. The American Medical Association took up radio's free offer and cooperated with the National Broadcasting Company in presenting several regular series of programs directed toward public health education. This cooperation between an organized medical association and the broadcasting industry has progressively grown to include programs heard on NBC, Columbia, and the Blue nation-wide networks: "Your Health", "Medicine in the News", "American Medical Association Calling", and the current series, "Doctors at Work," now in its second year. Public school systems throughout the country have accepted the invitation to use some of these specially designed programs for hygiene classes in the schoolroom where the class tunes in weekly for lessons in dramatized form. Undoubtedly the A.M.A. programs represent the greatest advance in this field and have been acclaimed by station managers as exemplary of educational radio that *works*.

Less conspicuous but increasingly widespread have been the activities of many city, county and state medical societies through their local radio stations, notable among which have been Massachusetts and New York. Working on a smaller scale, these organizations use simpler forms of presentation: talks, interviews, question-and-answer programs. One of the first scientific surveys of *results* was made by the Public Relations Bureau of the Medical Society of the State of New York in 1940 by means of a questionnaire sent to station managers. Practically every state was represented in the 376 replies. On the listener value of one of the society's representative broadcasts, eighty-two judged it high, 142 medium, and forty-nine low. The broadcasters answered an emphatic "No" to the question, "would the president of the local medical society attract listeners regardless of his ability as a speaker?" Further conclusions were that medical speakers generally are interesting to a substantial portion of the radio audience; that it is the material rather than the speaker that makes the audience, and that the same material presented in a way to satisfy professional radio dramatic values would kindle a considerably wider listener interest. It was pointed out that "dramatic values" do not necessarily entail experienced actors, sound effects and complicated production routine, but rather the extraction of simple dramatic and human interest values inherent in any subject by careful preparation of the script, even by a single speaker.

From a practical standpoint, the errors of local medical societies venturing into radio have been those of most radio speakers. In the first place, they fail to realize the essential differences between public speaking and the more intimate style of the microphone directed at the individual in his home. They are apt to "address the radio public" instead of making a bid for the listeners' interest. Many speakers unconsciously assume that the audience is there and will stay there; then read from poorly adapted scripts—often in a stilted or expressionless manner—and take it for granted that by some process of "wireless osmosis" the subject will get across. Doctors too frequently obscure their information with technical camouflage, giving Mr. Average Listener the impression that their talks are directed not to him but to other doctors.

What can the local medical group, composed of busy physicians inexperienced in broadcasting, do to effectively use radio as an instrument of public health education? They can employ the fundamental principles of presentation which they themselves, as listeners, demand of others: a sincere, yet

informal microphone manner, an arresting opening and sustained interest, short sentences of colorful and descriptive words wherever possible. If technical terms are used they should be defined. Statistics can be humanized and analogies can illustrate much information that the casual ear would miss. Straight talks, interviews, or if good talent is available through the local theater guild, dramatizations may be employed with only a moderate expenditure of time. The programs are best arranged in a regular series (at least once a week), linked with a certain degree of continuity, each dealing with one main point. And to put that point across it may be well to follow this old formula for a good sermon, "Tell 'em what you're going to tell 'em; tell it to 'em; then tell 'em that you told 'em".

It is a well proven fact that practically every radio station in the country will cooperate enthusiastically in planning, producing and publicizing such an educational project. Can the medical profession, now placing an increased emphasis on preventive medicine and conservation of health for our war effort, afford to underestimate this opportunity?

Results already have demonstrated that the recognized medical society *can* use radio for public health education—and do it effectively, ethically.

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EDITOR'S NOTE: Since this article was written the A.M.A. announced (*J.A.M.A.,* November 21, 1942) that "American Medical Association dramatized radio broadcasts in cooperation with the National Broadcasting Company will be resumed Saturday, December 26, at 5:00 P. M. EWT. The title of the new series will be 'Doctors at War: Book III of Doctors at Work' . . . Time is donated and production costs are shared by the National Broadcasting Company."

VENEREAL DISEASE IN SELECTIVE SERVICE REJECTEES

MASON ROMAINE, M.D.,
Health Officer City of Petersburg
and
W. E. CHAPIN, M.D.,
Venereal Disease Control Camp Lee Area
Petersburg, Virginia.

Man power is under demand by both Army and Naval authorities, putting an unusual demand on civilian life. It would seem advisable then, from an epidemiological as well as from a public health standpoint, to study men rejected as unsuitable for these services. As a brief start on a larger problem, we have gone over all selective service rejections for venereal disease in this community up to October 1, 1942.

Petersburg is a city of 32,076 population, 18,320 of whom are white and 13,756 colored. We have no record of the exact number of either race called up, but the population figure will give a fair relative estimate of the proportion of each examined. All are from 20-45 years of age and all are from Petersburg, except a few referred to us from examining boards nearby, principally the Health Departments of Chesterfield, Prince George and Dinwiddie Counties.

Four white men were rejected on account of venereal disease, three having had treatment previously for syphilis. Of the four, two are congenital, one late latent, one unclassified syphilis.

Two hundred and twenty-one colored men were rejected for venereal disease during the same period.

NUMBER MEN INVOLVED

Syphilis and Chancroid	1
Gonorrhea	12
Syphilis and Gonorrhea	20
Syphilis	188

INFECTIONS

Chancroid	1
Gonorrhea	32
Syphilis	209

CLASSIFICATION OF SYPHILIS

Primary and Secondary	28
Early Latent	45
Late Latent	87
Cardio-vascular C.N.S. and ocular	12
Congenital	5
Unclassified	32

The clinical classification of these men has been entirely dependent upon one of us (M.R.) assisted

by Capt. W. M. Bowman now in the Army Medical Corps. The rather large number unclassified does not mean they were not studied. Some are under treatment at other places and their diagnosis cannot be verified. Others have a positive Wassermann reaction, but no clinical verification of disease. Despite a very excellent nursing staff, some have been lost or delinquent before classification.

Such a complete follow-up of a class of infected men is only possible with the cooperation of all the community authorities involved. The local Selective Service Board has been extremely cooperative to the extent of their power, delegating to the Health Department the right to summon men for a verification of the preliminary blanket serological tests.

The local physicians have seconded our efforts consistently and are carrying a large share of the treatment of these patients. Without their cooperation we would not be able to follow the patients at all.

The local police authorities as a court of last appeal give the necessary backing. Whereas it is seldom necessary to call on them to serve warrants for breach of quarantine, yet their consistent and wholehearted support lends strength to the program. The occasional jolting of the recalcitrant member of society strengthens the well doing of the remaining ones.

And over all, the State Health Department, with its central supervision for the whole community, develops a broad outlook, whereby a man can move practically wherever he wishes and still efforts reach out after him to prevent the spread of communicable disease.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
THE COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Biologic Basis for the Management of Neurosyphilis*

Infection in syphilis occurs usually through direct or indirect contact with moist surfaces, the mouth or genitalia of a recently infected individual. Following infection a dissemination of the virus occurs within a period of hours. Spirochetes have been demonstrated in the regional nodes of animals in twenty-four hours. While the generalized spread of organisms is taking place, there is a multiplication at the inoculated site where, in an average of three weeks, the chancre appears. The chancre and its satellite bubo last a few weeks, healing spontaneously. Since the blood is not a suitable medium for the Spirochaeta pallida, an environment is sought in the tissues. These lesions, in an interval of approximately six weeks following the chancre, culminate in the secondary outbreak characterized by large numbers of organisms and little or no destruction of tissue, so that, after a period of days or months, if uninfluenced by treatment, spontaneous healing with little or no scarring results.

Following the secondary outbreak with healing, a series of recurring lesions containing spirochetes appear. These relapsing lesions occur in all tissues.

The patient may then enter upon a period of indeterminate length of latency averaging approximately seven years, showing no outward sign of syphilitic infection and recognizable, if at all, only by serology tests.

During this period of apparent latency and following the dissemination of organisms, there is occurring an invasion of the perivascular lymphatics, followed by a vascular reaction assuming the form of endothelial swelling with proliferation and the development of an obliterative endarteritis. This is accompanied by perivascular infiltration with lymphocytes, the appearance of plasma cells, fibroblastic proliferation and healing. Two phenomena are taking place: 1. slowly progressing inflammation terminating in fibrosis and causing physiologic breakdown from vascular occlusion and fibrosis, or 2. an inflammatory reaction with tissue destruction but relatively few organisms and termination in the allergic reaction of tertiarism.

The pathologic lesions in all stages are identical, the difference being largely one of degree. The stim-

*With the permission of the author (Dr. J. Earle Moore) and the publishers (C. C. Thomas, Springfield, Ill.) free use has been made of "The Modern Treatment of Syphilis".

ulus provoking the reaction may be trauma. In most cases, however, there is no known reason why a patient develops lesions of one or the other types or locations.

With the tissue invasion of the organisms there is developed an alteration in the reaction of the host to the virus. After fifteen days from the time of infection, reinoculation is not possible and this resistance to reinfection persists during the lifetime of an individual unless altered by treatments given early in the infection. After completion of the secondary period in man, an immune relationship is established and not altered by further treatment. It has been suggested also that some degree of immunity persists even after complete eradication of the infection.

In the interaction between host and parasite there is apparently developed a relationship of balance between host and parasite whereby the parasite may remain viable, causing little tissue reaction or increase in number until the balance is disturbed and new inflammatory reactions are set up. The present feeling is that the existence of the infection now has altered the individual so that the virus in the syphilitic acts differently from that in a normal person. The character of the lesion is now changed so that the destructive and proliferative changes with relatively few Spirochaeta pallida are in the ascendency. There is then developed in the syphilitic individual an alteration in the tissue which may manifest itself by overactivity or "allergy", or of indifference or "anergy"—both of these states continually undergoing alteration and interchange.

In untreated cases of syphilis approximately 25% of all infected are of the allergic type, developing gummatous late lesions and relatively free from degenerative sequelae; 25% develop chronic inflammation and fibrosis involving chiefly the cardiovascular and nervous systems; 25% have tissue damage so slight that they develop no physiologic disturbance and remain in prolonged latency; 25% attain a degree of resistance resulting in sterilization and spontaneous cure. There is considerable overlapping and change between these groups. Furthermore, different body tissues respond to infection in various degrees and interact with each other. It is true that those developing gummatous late lesions rarely develop neuro-syphilis, while the converse is true in individuals with late lesions characterized by fibrosis.

Clinical observations also indicate that in some patients the body's own defense mechanism may deal successfully with invasion of the nervous system. It is assumed that the neuraxis is invaded by the Spirochaeta pallida in every patient at the time of the general dissemination of organisms. Only 25% of untreated individuals develop, however, clinical evidence of central nervous system involvement. In an additional 12-15% abnormalities are found in the spinal fluid with no clinical evidence of neurosyphilis existing. Of the remainder, 17% of patients with late syphilis but normal spinal fluids show suggestive neurologic abnormalities and it is probable that the body's defense mechanism has cared for them.

Treatment exerts a disturbance on either or both the response of the host to organisms freshly introduced from without or to the host's own parasites. Man may be rendered susceptible to reinfection by treatment but only if it is begun early—usually before the third month; after this time the refractory state is apparently not altered.

Treatment may depress or interrupt the process of formation of gradually developing immunity so that, while being resistant to organisms from without, one still has inadequate defense to the Spirochaeta pallida from within. Under these circumstances, a fresh multiplication and dissemination of organisms may occur and be manifested by relapse—usually seen as mucosal or cutaneous secondaries, neurorecurrence or ocular relapse.

This interference is limited to early syphilis and probably within the first year but extending as long as four years, after which it is no longer possible to alter the patient's defense mechanism either by organisms from within or without. Therefore, early syphilis must be treated continuously until complete sterilization is reached, but in late syphilis this is not so essential and an intermittent type of therapy may be used.

With relation then to neurosyphilis, invasion of the nervous system occurs probably in all patients and, unless the course of the disease is influenced by treatment, this takes place in most instances within the first year after infection. In spite of this constancy of invasion, relatively few individuals later develop actual tissue involvement manifested by obvious clinical signs of neurosyphilis, the proportion being markedly influenced by various factors particularly sex and race.

With these factors in mind, the classification of the various types of neurosyphilis both on a clinical and an anatomic basis may be divided into four groups: —

1. Predominantly meningeal neurospyhilis occurring early, usually within the first two years after infection and including syphilitic meningitis, most of the neuro-recurrences and early asymptomatic neurosyphilis.

2. Predominant vascular neurosyphilis which may occur early but is usually a late manifestation. This depends on an endarteritis and may be associated with meningeal or parenchymatous involvement. It causes cerebral vascular accidents.

3. Predominant diffuse meningo-vascular neurosyphilis in which parenchymal changes may or may not be present. This includes brain gumma, syphilitic epilepsy, diffuse cerebrospinal syphilis and late asymptomatic neurosyphilis.

4. Predominant parenchymatous neurosyphilis, including paresis, tabes and primary optic atrophy.

The pathologic changes in paresis vary widely; grossly the brain is covered by thickened and opaque meninges, the dura being altered less than the pia and arachnoid. Adhesions between them and the dura as well as between the pia and cortex are common. The pathologic essentials include a diffuse inflammatory reaction in the cerebrum, a chronic spirochetal encephalitis localizing about the vessels and meninges with coat sleeve lymphocytic and plasma cell infiltration about the capillaries, and a degeneration of the parenchyma with compensatory gliosis. There is a variation in the relative proportions so that in some instances extreme atrophy and little inflammatory change is apparent; in others the vascular picture and plasma cell infiltrations are predominant. Spirochaeta pallida may or may not be demonstrable but are always present.

In the predominantly meningeal and vascular groups of the classes mentioned above, the inflammatory element predominates; in the parenchymatous, the degenerative. For this reason treatment is more successful in the former groups in proportion to the extent that inflammation predominates over degeneration.

The physician who undertakes the treatment of any manifestation of syphilis should have a clear understanding of what happens to an individual who acquires the disease, and in addition the total effects (beneficial and harmful) of the remedial agents on the person. This specific infectious disease can be cured in most cases in that the Spirochaeta pallida is destroyed. This is easier in the earlier stages of the infection. The scars and parenchymatous destruction cannot be corrected in most instances. It should be emphasized that the old idea of quaternary syphilis has been abandoned. The progression of syphilitic inflammatory processes depends on the presence of the organism. It is true that as as result of partial or complete vascular occlusion and shrinking of replacement fibrous tissue cells, there may be some increase in symptomatology for a period after the eradication of the infectious agent.

In clinical practice it is impossible to determine for sure without therapeutic trial how much of the symptomatology in late syphilis is due to temporary dysfunction from the inflammatory processes or from definite degeneration and scar formation. A case of neurosyphilis with both clinical and laboratory findings of paresis may have a subacute or chronic encephalitis without much cortical degeneration as the basis for the clinical picture. In this case where the inflammatory reaction, edema, perivascular infiltration and so forth predominate, specific therapy gives excellent results. There is no case of untreated neurosyphilis which is free from some inflammatory reaction even after degenerative processes occur predominantly. In other words, without treatment to the point of cure, there is no such condition as "burned out syphilis".

The management of neurosyphilis consists of first, correction of associated abnormalities; second, improving patient's nutritional state; third, specific chemotherapy (arsenicals, bismuth, mercury and iodides); and fourth, additional theraputic procedures like fever, tryparsamide, etc. *It should be emphasized that specific chemotherapy is the most important item in regular treatment.* The accessory and additional measures like malaria and intraspinal treatment should not replace general therapy. It should be remembered that these patients have general syphilis as well as neurological involvement. Selection of specific drugs, special procedures and general management must be individualized. The plan or scheme of therapy will vary with the findings in each case.

MENTAL HYGIENE ACTIVITIES

Alcoholism a Medical Problem.

Governor Colgate W. Darden, in a recent statement to the press, has expressed his hearty approval of the plan to provide separate care and treatment facilities for inebriates—and made some timely suggestions regarding the establishment of such an institution. The Governor also announced that he has asked the Department of Corrections to give him all the data available as to the number of inebriates committed to the jails during the past year, as represented in the total of more than 100,000 of all commitments during this period, laying special emphasis on the number of times any given individual may have been committed in this period.

The State Hospital Board has expressed its pleasure and has thanked the Governor most heartily for his interest as it will aid greatly in the effort of the Board to satisfactorily and speedily work out a plan whereby this ever-growing problem can be taken care of in a practical as well as scientific manner.

The Board is emphasizing the importance of considering this as a medical and health problem, as it seriously affects every community in the State. Therefore, for a successful and effective program, a cooperative and sympathetic attitude is essential among the physicians of the State, as well as social agencies and law-enforcement officials.

The State Hospital Board adopted the following resolution, which had been under consideration for sometime, in its meeting on November 24. A copy was presented to the Governor by the Board's Chairman, Senator Morton G. Goode; Dr. H. C. Henry, Commissioner; Dr. R. A. Morison, Board Member who sponsored the resolution; Mr. George P. Coleman, Board Member; and F. W. Gwaltney, Executive Secretary. The Governor received this resolution enthusiastically and later gave it to the press. This resolution should at least form the basis for future action in this very important matter.

WHEREAS, The State Hospital Board is authorized by statute to supervise, direct, and control matters pertaining to the care, treatment, and prevention of mental disease, mental deficiency, epilepsy, and inebriacy; and

WHEREAS, For the proper institutional care and treatment of any of these groups, adequate segregation and classification of the various types is necessary; and

WHEREAS, For many years the State Hospital Board, hospital administrators, city and county officials, welfare authorities, and many others have been concerned about the ever growing problem of the inebriate; and

WHEREAS, The State Hospital Board is especially concerned because of the statute which was adopted in 1916, requiring the State Hospitals to receive "any person who through use of alcoholic liquors or habit-forming drugs, has become dangerous to the public or himself, and unable to care for himself or his property or family, and for either of these reasons has become a burden on the public"; and

WHEREAS, Because of this requirement approximately 8,000 persons have been admitted as inebriates to the State Hospitals since the adoption of the law; and

WHEREAS, The number of such admissions has been increasing at an alarming rate until it has reached approximately 25 per cent of the total of all admissions to the four State Hospitals; and

WHEREAS, In the year which closed on June 30, 1942, of 2,764 admissions to the four hospitals, 667 or 24.1 per cent were admitted because of a frank alcoholic psychosis or as an inebriate. Approximately another 200 of the admissions on their own statement were intemperate or heavy drinkers, making alcohol the direct or contributing factor in 30 per cent of all admissions; and

WHEREAS, Since the Western State Hospital has been designated by the State Hospital Board to receive inebriates from the whole State when admitted as such; and

WHEREAS, Because of this designation, large numbers of inebriates are constantly going in and out of this hospital, which movement overshadows, dominates, and seriously interferes with the effort to care for and treat the more than 2,200 insane patients in this institution; and

WHEREAS, After many years of experience in the present method of handling the inebriate in the State Hospitals, it is the firm conviction of the State Hospital Board that the State should endeavor to find a more satisfactory solution to this problem, and that the care and treatment of the insane should no longer be confused or hindered by the ever growing traffic of alcoholics in and out of the mental institutions; and

WHEREAS, Since the statute of 1916 requires that the superintendents of State Hospitals recieve and keep inebriates until the superintendent of the institution shall declare such person cured and restored to his normal condition, and since because of limitations in space, personnel, and treatment facilities, this has never been possible.

BE IT RESOLVED, *First,* That the State Hospital Board go on record as favoring the establishment, as early as conditions will permit, of a separate institution for the care and treatment of the inebriates.

BE IT RESOLVED, *Second,* That all work, care and treatment be under psychiatric direction with an ade-

quate staff of medical assistants, nurses, attendants, occupational and industrial therapists, and others; that full advantage be taken of the latest methods of treatment; such as, psychotherapy, occupational and industrial therapy, re-education, etc.

BE IT RESOLVED, *Third,* That the proposed institution organize and conduct a program of study and research, where in cooperation with other like projects both within and without the State, the whole problem of alcoholism, its prevention, treatment, and cure, may be studied scientifically and possible solutions found and given to the public for their use and guidance.

BE IT RESOLVED, *Fourth,* That the Chairman of the State Hospital Board be authorized to appoint a committee or to designate the whole membership of the Board to present this resolution to Hon. Colgate W. Darden, Jr., Governor of Virginia, and invite him to sponsor this project and present it to his advisory council and then to the General Assembly which meets in January, 1944.

BE IT RESOLVED, *Fifth,* Because of the preventive, control, economic, social, medical and research aspects of this problem, doubtless, many interested persons and groups would like to aid the State Hospital Board in the promotion of this effort. The Commissioner of Mental Hygiene and Hospitals is therefore authorized to etxend an invitation to the Research Divisions of the Medical College of Virginia and the Medical School of the University of Virginia, the Medical Society of Virginia, the Mental Hygiene Society of Virginia, and the Neuropsychiatric Society of Virginia to assist the State Hospital Board in solving the inebriate problem.

Since the State Hospital Board has very definitely called upon medical authorities to assist or take the lead in the solution of this problem, doubtless the Medical Society of Virginia and the Mental Hygiene Society of Virginia will lend their full cooperation in any reasonable plan which may be offered.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty year old white woman, who had had one previous pregnancy. She was first seen by a physician on June 1, 1941, because of fever and abdominal pain. She gave a history of having missed three menstrual periods and stated that she had expelled some products of conception three to five days before the visit of the physician. A purulent vaginal discharge was present. She was given morphia gr. ¼ and sent to a hospital. She was admitted to a hospital shortly thereafter. Temperature 99.4, pulse 120, respirations 22. The physical findings were not recorded. On the following morning the temperature was 103.6 degrees and pulse 96. A dilatation and curettage was done on that day, June second, and some products of conception were removed, and a diagnosis of an "infected abortion" was made. The patient continued to run a septic course with vomiting and cyanosis. Blood count on June third, first postoperative day, showed hemoglobin 80 per cent, red blood count 3,820,000, and white blood count 18,200. On the fourth postoperative day a blood culture was positive for streptococcus and staphylococcus aureus. She was given prontosil, neoprontosil, intravenous glucose, and morphia. She died on the eighth hospital day. An autopsy was not performed.

COMMENT

This has been classified by the committee as a preventable obstetrical death. It would seem from the history and developments that this patient had an induced abortion, which of course would make the death preventable. In addition, no medical care was obtained until the patient was seriously ill. The treatment which was instituted after admission to the hospital is hardly in line with the present generally approved methods of management of infected abortions. The patient may have had septicemia and peritonitis at the time of admission, or in any event was obviously seriously infected. Under these circumstances it is usually better to treat the patient along conservative lines, rather than resort to a dilatation and curettage. Operative manipulations in the pelvis disturb the attempts of nature to limit the inflammatory process to the pelvis, and are frequently followed by a generalized spread of the infection. Small blood transfusions and intensive sulfonamide therapy, along with general hygienic measures and symptomatic therapy would have offered this individual a better chance for survival.

Miscellaneous

The Critical Antimalarial Problem and Its Solution

Dr. L. H. Weed, of the National Research Council, has requested that the attention of readers of the MONTHLY be called to the urgent necessity of conserving available supplies of quinine. Along with the vastly increased need for antimalarial drugs by our armed forces and those of our allies, the customary source of 90 per cent of the world's quinine supply has been cut off from us.

The War Production Board and National Research Council have worked out a program which it is believed will result in a sufficient supply of antimalarial drugs for the civilian population as well as for the armed forces of the United Nations.

Stocks of quinine and other cinchona alkaloids have been frozen and their use limited to treatment of malaria, except that quinine can be used in myotonia congenita and quinidine in cardiac disorders. Quinine cannot be used as local anesthetic or sclerosing agent nor in paralysis agitans, amyotrophic lateral sclerosis, myotonia atrophica, nor for the induction of labor.

"Totaquine", a mixture of alkaloids from South American cinchona bark, is recommended as substitute for quinine in treatment of malaria. This preparation contains not less than 7 per cent nor more than 12 per cent anhydrous quinine and a total of not less than 70 per cent nor more than 80 per cent of the anhydrous crystallizable alkaloids, such as quinidine, cinchonine, and cinchonidine. In dose of 10 grains 3 times daily, it is believed to equal quinine sulphate orally for treatment of malaria. It is hoped that the supply of Totaquine will be adequate.

Atabrine of proved chemical purity will be produced in adequate amounts in this country. Temporary gastro-intestinal disorders occur in a variable percentage of patients receiving Atabrine; investigations under way may disclose the cause and render possible its removal. Yellowish pigmentation of the skin, without impairment of liver function, may be produced; this disappears on cessation of medication. Atabrine is an effective antimalarial, both prophylactically and therapeutically; its action is slower than that of quinine, thus rendering it inferior for initial treatment of malaria but in certain other respects it is superior. It is very effective after 1 to 3 days preliminary treatment with quinine.

The following recommendations have been made:

1. COMBINED QAP TREATMENT. (Method of Choice.)
   (a) Totaquine (or quinine sulphate) 0.64 gram (10 grains) 3 times daily after meals 2 to 3 days or until pyrexia is trolled; then give
   (b) Atabrine, 0.1 gram (1½ grain) 3 times daily after meals 5 days. After 2 days *without antimalarial medication,* give
   (c) Plasmochin, 0.01 gram (3/20 grain) 3 times daily after meals for 5 days, except to debilitated patients, who should receive only *2 doses daily.* DISCONTINUE IF TOXIC SYMPTOMS OCCUR. NEVER GIVE PLASMOCHIN AND ATABRINE CONCURRENTLY.
2. ATABRINE-PLASMOCHIN TREATMENT. (For simple vivax infections or for other infections if Totaquine or quinine not available.)
   (a) Atabrine, as above, for 7 days. After *2 days without antimalarial* medication, give Plasmochin, 0.01 gram (3/20 grain) 3 times daily as above.
3. TOTAQUINE-PLASMOCHIN OR QUININE-PLASMOCHIN TREATMENT. (If Atabrine is not available.)
   (a) Totaquine or Quinine Sulphate as above for 7 days, during the last 5 of which accompany each dose of the cinchona product with Plasmochin, 0.01 gram (3/20 grain) 3 times daily.
4. SUPPRESSIVE (PROPHYLACTIC) TREATMENT.
   (a) Atabrine, 0.1 gram (1½ grain) twice daily after meals each week, allowing 2 to 3 day intervals between medication.

   In the present state of knowledge, Atabrine should be used only under supervision of a physician or public health officer.

Military Medicine

Virginia Doctors in Service Supplement 3.

This is the Third Supplement to the list of Virginia Doctors in Service, the original list appearing in the July, 1942, MONTHLY, with Supplements in September and October. Names are given alphabetically, with home addresses, in view of the constant changes in location and rank. Readers will render a service by sending nomes of any omissions that they may be published at a later date.

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Dr. Wm. Richard Smart, Norfolk.
Dr. H. Garnett Snead, Franklin.

Dr. Wilson P. Stephens, Standardsville.
Dr. Geo. Dennis Vaughan, Richmond.
Dr. John Tabb Walke, Richmond.
Dr. Geo. Brooks West, Norfolk.
Dr. Wm. L. Wingfield, Ashland.
Dr. Herman Wolff, Lynchburg.
Dr. Garland M. Wright, Bridgewater.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for November 1942, compared with the same month in 1941, and for the period of January through November 1942, compared with the same period in 1941, follows:

	Nov. 1942	Nov. 1941	Jan.-Nov. 1942	Jan.-Nov. 1941
Typhoid and Paratyphoid	15	47	236	315
Diarrhea and Dysentery	111	301	4,474	5,502
Measles	32	400	4,874	35,116
Scarlet Fever	318	310	1,471	1,467
Diphtheria	119	176	637	638
Poliomyelitis	3	30	42	147
Meningitis	14	4	156	96
Undulant Fever	3	3	32	15
Rocky Mountain Spotted Fever	2	1	47	32
Tularemia	1	2	34	27

STANDARDS FOR MATERNITY CARE OF WOMEN EMPLOYED IN INDUSTRY

Increased employment of women in industry, as a war measure, necessitates protecting the health of women workers who are pregnant and of those who recently have become mothers. The need of providing care for young infants also is recognized.

Recently, a well qualified group, including prominent obstetricians, pediatricians, industrial hygienists and representatives of labor and employers, after due consideration, issued a statement of standards for maternity care and employment of mothers in industry. These standards are intended to guide employers in providing for pregnant women and mothers in their employ such special consideration as is essential for their health. These standards, also may guide physicians in advising both patient and employer with regard to suitable provision to meet the health requirements of mothers engaged in industrial activities.

It is believed that the recommendations are well within the reasonable performance of all employers. It is known that some employers now are making suitable provisions in line with these suggestions.

The statement indicates that, although the labor situation in this country is acute because of the war, it does not require the recruitment or employment of pregnant women or women with young infants; moreover, that a woman who is expecting a child should give first consideration to her own health and to plans for safeguarding her infant's health. Nevertheless, some women who are pregnant or who have young children may find it necessary to work. The Committee also recognizes that in such cases provisions for maternity care should be made and leave of absence granted to protect the health of the mother without jeopardizing the mother's job.

The Committee realizes that conditions of pregnant women and the home duties performed outside of working hours vary widely, and, therefore, some individualization of arrangement is necessary. A few general recommendations, however, have been given as a guide.

It is recommended that the pregnant woman who works should have adequate prenatal care; that she should not work on a night shift nor more than eight hours a day or 48 hours a week at most; and that rest periods during working hours be compulsory. A minimum of six weeks leave of absence before delivery and eight weeks after delivery is advised. Employers should grant leave of absence readily on presentation of a statement from the attending physician if complications of pregnancy either before or after delivery arise.

Detailed recommendations are given with regard to the types of work in which pregnant women should not be employed. Occupations that involve heavy lifting or other heavy work or continuous standing or moving about are undesirable. Occupations requiring a good sense of bodily balance and occupations involving accident risks, such as operating a punch press, are too hazardous for pregnant women. Exposure to specified toxic substances (aniline, benzol, nitrobenzol, turpentine, etc.) is considered extra hazardous during pregnancy, and it is emphasized that pregnant women never should be employed in any workroom where these substances are used or produced.

Physicians in Virginia may be called upon for this type of advice more frequently in the future than heretofore. They have a real opportunity not only to guide the activities of pregnant women who may seek advice as individual patients but also may have an opportunity to impress upon employers the importance of proper provision for this type of employee.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUREN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

Notice to Executive Committee Members.

By order of Mrs. H. W. Rogers of Norfolk, president, the Executive Committee of the Woman's Auxiliary to the Medical Society of Virginia will hold its winter meeting in the Richmond Academy of Medicine Building on January 27, at 1:30 p.m. All members are urged to be prompt in order to catch afternoon trains home.

The Norfolk Auxiliary.

Met on December 2 in the Library of the Medical Arts Building under the presidency of Mrs. W. E. Butler. Dr. A. Brownley Hodges, civilian defense chief of emergency medical service, gave a brief talk requesting the assistance of the Auxiliary members in organizing and distributing equipment for the casualty centers in Norfolk. Mrs. Millard Savage was made chairman of the committee to assist Dr. Hodges.

Mrs. Richard Reynolds gave an interesting résumé of the life of Jane Todd Crawford, the first woman to undergo a now familiar surgical operation.

The Auxiliary is sponsoring the sale of war bonds and stamps at Ames and Brownley's Department Store, every Monday, and to date stamps and bonds in the amount of $27,000 have been sold. The members also serve the sewing room at Red Cross headquarters every Friday, and as an additional wartime activity sponsor dances for service men at USO headquarters.

Three new members were taken into the Auxiliary at this meeting—Mrs. Ben Steingold, Mrs. M. L. Galbraith, and Mrs. Philip B. Parsons.

MRS. BROCK D. JONES, *Chairman, Press and Publicity.*

Alexandria.

The December meeting of the Woman's Auxiliary to the Alexandria Medical Society was held at the "Laura Lee Candy House".

Mrs. Robert Hightower, Program Chairman, introduced the speaker, Mrs. Stanley King. who is Chairman of the Volunteer Special Service Committee of the Red Cross. She discussed the training, duties and requirements of the service group known as the "Gray Ladies".

Mrs. Harrison Picot, chairman of the committee, with Mrs. C. E. Arnette and Mrs. C. V. Amole, assisting, sold $25.00 in pansy plants. The proceeds will go to the buying of equipment for the Alexandria Hospital.

The Auxiliary donated the sum of $160.00 to the Alexandria Laboratory for purchasing a microtone.

A beautiful hand-made quilt was raffled off and $25.00 cleared.

Mrs. Charles Nicholson, Jr., was taken in as a new member.

Following the business meeting, an informal party was held by Mrs. W. Clyde West, hostess.

MRS. C. E. ARNETTE, *Chairman. State Press and Publicity.*

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Mental Health In College. By CLEMENTS C. FRY, M.D., Lecturer in Psychiatry and Mental Hygiene and Psychiatrist to the Department of University Health, Yale University. With the Collaboration of EDNA G. ROSTOV, Research Assistant in Psychiatry and Mental Hygiene, Yale University. New York. The Commonwealth Fund. 1942. xix-365 pages. Cloth. Price $2.00.

Mental Illness: A Guide for the Family. By EDITH M. STERN. With the Collaboration of SAMUEL W. HAMILTON, M.D. New York. The Commonwealth Fund. 1942. xvii-134 pages. Cloth. Price $1.00.

Fractures. By PAUL B. MAGNUSON, M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Passavant Memorial Hospital and Wesley Memorial Hospital, Chicago. Philadelphia. J. B. Lippincott Company. 1942. 4th Edition Revised. xxii-511 pages. 317 Illustrations. Cloth. Price $5.50.

Proceedings of the Eighth American Scientific Congress. Held in Washington, May 10-18, 1940. Under the Auspices of The Government of the United States of America. Volume VI. Public Health and Medicine. Department of State, Washington. 1942. 496 pages.

Encephalitis. A Clinical Study. By JOSEPHINE B. NEAL, A.B., M.D., Sc.D., F.A.C.P., Associate Director, Bureau of Laboratories, Department of Health, New York; Clinical Professor of Neurology, College of Physicians and Surgeons, Columbia University. Grune & Stratton, New York. 1942. xviii-563 pages. Cloth.

Since the first publications of French authors and the well know monography of C. v. Economo (1917), a considerable number of papers have been published dealing with the various aspects of epidemic encephalitis. This book is a publication of the William J. Matheson Commission for Encephalitis Research. If, as the secretary of this commission points out in his foreword, the dietary deficiencies and privations of the present war may well furnish the soil for another epidemic, this publication would indeed be timely and welcome. It is a comprehensive whole of all the problems involved and will be of inestimable help for the general practitioner and the neurologist. The following subjects are discussed (after a general discussion): epidemiology, neurological complications following acute infections and vaccination, clinical course of epidemic encephalitis, treatment of epidemic encephalitis, surgical treatment of post-encephalitic symptoms, psychiatric sequelae of epidemic encephalitis, post-encephalitic behavior disorders in childhood and pathology of encephalitis. Special emphasis is laid on the various forms of encephalitis such as observed in various regions and at various periods. The whole subject is discussed on a very large scale, kindred conditions are included and the comparative pathology of encephalitis has not been neglected. Each chapter represents the personal view and experience of the various authors the names of which are sufficient guarantees of the value of their contributions.

W. RIESE.

Tales of the Tuckers. By BEVERLEY R. TUCKER, M.D., Richmond, Virginia. The Dietz Press, Richmond. 1942. 170 pages. Illustrated. Cloth. Price $5.00.

The well known specialist in neuro-psychiatry, Dr. Beverley Randolph Tucker of Richmond, Va., is the author of "Tales of the Tuckers", which is being highly commended to the reading public. Dr. Tucker is eminently fitted to be the author by reason of his heredity, environment and accomplishments in the literary field, for among other things, he has to his credit an historical novel, a book of poems, a play, a volume of essays on genius, and various medical treatises. For twenty-six years he was professor of nervous and mental diseases at the Medical College of Virginia, and has been for a number of years physician-in-chief of the Tucker Hospital.

"Tales of the Tuckers" is a happy choice for the title of this book for it is essentially a series of tales, many of which have been received by word of mouth. The volume is unusually attractive in format, the frontispiece being the ancient Tucker House at Williamsburg, and besides the family coat-of-arms, there are eighteen portraits of the Tucker clan. Though these are stories of departed Tuckers, they live and move and have their being in every page of the book, beginning with the illustrious progenitor, St. George Tucker of Bermuda-Virginia and coming down through the male line for five generations to the author. The table of contents is indeed illuminating as it reveals the amazing versatility which this family possessed. Not satisfied to follow one profession, a Tucker would choose several. No hum-drum, circumscribed existence for them. They walk the road of high adventure in that romantic, vanished era. In every war of American history the patriotism of the Tuckers is exemplified. Their contributions to the American way of life is not easily computed. If you enjoy true stories of thrilling adventure you will find it in "Tales of the Tuckers", especially in the colorful life of James Ellis Tucker.

It cannot be said that the Tuckers are a typical American family, for in health, intelligence, culture and achievements they are distinctive. Accord-

ing to Dr. Tucker's book, of the nineteen Tuckers whose age at death is known, the average life span was sixty-three years. They were remarkably free from such diseases as insanity, feeblemindedness, cancer, tuberculosis, serious alcoholism, heart or kidney disturbances, etc. Therefore this family makes interesting reading from the standpoint of its genetic and eugentic importance.

In "Tales of the Tuckers" charming, and sometimes astonishing anecdotes, woven of humor and pathos, reveal the fact that truth is often stranger than fiction. Did not the author's Uncle Jim outwit highway robbers, along with other daring exploits and hair-raising adventures, both in America and abroad? Dr. Tucker has a decided flair for research—Tuckerana in particular, and the reader enjoys his virile style in presenting his subject matter. "Tales of the Tuckers" is readable and entertaining as well as informative. Tucked away in a footnote the following unusual facts are found: Of the forty-nine Tuckers mentioned, eleven were attorneys-at-law, eight of whom became judges or professors of law or both; ten were physicians, five becoming heads of hospitals or professors of medicine or both; six were clergymen, three of them becoming bishops; three educators; six business executives; two chemists; three army officers; one farmer, and three who's occupation is unknown. Of the forty-nine mentioned in "Tales of the Tuckers", twelve have published books or been editors, four of whom were also poets. Many of them served in public office, one being Treasurer of the United States and four others served in the Congress of the United States.

MARY LOUISE GILLS.

Central Autonomic Regulations in Health and Disease. With Special Reference to Hypothalamus. By HEYMEN R. MILLER, M.D., Associate Attending Physician Montefiore Hospital, New York City. Introduction by JOHN F. FULTON, M.D., M.A., D.Phil., (Oxon) Sterling Professor of Physiology, Yale University. Grune and Stratton. New York. 1942. xx-430 pages. Illustrated. Cloth. Price $5.50.

This book is a discussion of the central nonvoluntary regulation of temperature, water and mineral balance, metabolism, circulation, sleep, reproduction, and the emotions, as well as a brief résumé of the anatomy of the hypothalamus. The peripheral innervation of organs is not included to any extent. It represents an amazing amount of reading by the author, for the bibliography is extensive. As a reference book in this field, it can be recommended. As a book to read however, it is very trying. Something about the author's style makes it well-nigh impossible to read more than a few pages at a time. This may be because the facts are listed rather than digested.

There are some curious apparent errors in the text. On page 3, in describing the axon reflex, the author arbitrarily stops a nerve impulse in the middle of an axon and sends it back along another branch. On page 4, he states that Lewis involves the axon reflex to explain the response of skin vessels to histamine. He often speaks of "skeletal blood vessels" where he must mean "skeletal muscle vessels". He claims (p. 72) that epinephrine from the adrenals is a "chemical excitant of sympathetics." On page 138 he states "the intrinsic autonomic activity of the heart depends, however, upon a fine network of intracardia nerve fibrils and ganglia."

Another annoying characteristic in his inclusion of brief clinical case histories which have little apparent relation with the subject under discussion. For instance (p. 142), in discussing regulation of circulation, he describes a typical case of mitral disease and suddenly concludes that "the innervation and function of the pulmonary circulation are important factors in these and other examples of cardiac and pulmonary disease", but he neglects to point out how or why they are involved.

Since this book stresses clinical applications, one is surprised to find so little mention of the nature of cerebral lesions in clinical pathologic sleep; there being much on location of experimental lesions.

The increasing appreciation of the amazing effects of the mind on such apparently non-volitional processes as menstruation, urination, perspiration and digestion make this book a definite contribution for reference by the research-minded physician.

R. J. M.

VIRGINIA MEDICAL MONTHLY

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M. PIERCE RUCKER, M. D.,
Editor

AGNES V. EDWARDS
Business Manager

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Editorials

War and Medicine

IT was the privilege of the editor to attend the recent annual conference of Secretaries and Editors of State Medical Associations at the headquarters of the American Medical Association. Among the speakers were Col. Fred. W. Rankin, President of the A.M.A.; Admiral Ross T. McIntire, Surgeon-General of the United States Navy; Dr. Frank H. Lahey, Chairman of the Board of the Procurement and Assignment Service for physicians, Dentists, and Veterinarians; General C. C. Hillman, representing the office of the Surgeon-General of the U. S. Army; Dr. James E. Paullin, President-Elect of the American Medical Association; Surgeon-General Thomas Parran, of the U. S. Public Health Service; Col. L. G. Rowntree, Chief of the Medical Division of the Selective Service System; Dr. Creighton Barker, Secretary of the Connecticut State Medical Society; Dr. Walter F. Donaldson, Chairman of the War Participation Committee of the A. M. A.; and General David N. B. Grant, of the Air Corps. We were greatly impressed by the earnestness and sincerity of the speakers. Medicine has a great roll to play. Of no other group, call it profession, trade or trust, is so much expected; nor has any other group such a wonderful opportunity for service. Our impressions from this meeting will be discussed under four headings. 1. Organized Medicine must supply the Armed Forces with adequate medical care. 2. There is even greater need for research, albeit of a somewhat different kind. 3. We must maintain our high standards of medical education. 4. We must supply the medical needs of the civilian population.

The needs of the Army and Navy have been met so far as 1942 is concerned. All but thirteen States in the Union have supplied more than their quota as of October 31, 1942. The percentages vary from 76 for Connecticut to 224 for New Mexico. Virginia supplied 138 per cent of her quota. What the needs for 1943 are, is not known at present. The Navy and the Air Forces will need 6.5 doctors per 1,000 men. The Army has

not as yet made known its needs. It is interesting in this connection to note, according to Gen. Parran, that the British had 3.5 doctors per 1,000 soldiers. In the first World War Germany had 3 doctors per 1,000. It is likely she has fewer in the present conflict. Admiral McIntire was enthusiastic about the Reserve Medical Officers. They are doing practically all the medicine and surgery in the Navy. The results they get in the treatment of the wounded are almost unbelievable, less than 1 per cent mortality. He mentioned particularly the prompt anti-shock treatment—morphine and plasma—on the battlefield, and the rapid transportation by plane to the base hospital as important factors in the results.

Research must go on, but probably along somewhat different lines. As an example, Admiral McIntire mentioned the effect of concussion of depth charges upon persons swimming or floating in the water. When a vessel carrying depth charges is sunk, the depth bombs go off automatically when they reach a certain depth, killing those in the water and demoralizing those attempting to rescue them. This problem has been solved in a large measure by medical research. Much work still remains to be done upon the treatment of shock and fatigue.

The medical schools must go on at their increased tempo. The authorities have no intention of disturbing a full time teacher in the medical schools whether he be an M. D. or not. The present medical students will be allowed to complete the three all-the-year sessions and one year as an intern in an accredited hospital. Some nine thousand will graduate next year and twenty-one thousand in the next three years. Large medical meetings will have to be discontinued due to the transportation difficulties and the inability of the doctor to get away from his increased practice. This means that the medical meetings must be brought to the doctor. The local and small societies must carry on and improve their programs. Nothing was said about medical journals.

As yet, the experts do not have the solution for the problem of maintaining the supply of medical students in view of the lowering of the draft age to 18 years. At the Editors' meeting in the evening this subject was again brought up and it was stated that the plan at present is for the youth upon leaving high school to enter upon a thirteen weeks' training period, and during this period the selection would be made of those who were to study medicine, engineering, etc. How this selection was to be made, no one seemed to know. Dr. Fishbein suggested that as good a plan as any would be to select doctors' sons for medicine. At least they would know something of the social and economic problems of medicine. When once selected, they would be paid and uniformed but granted a furlough so long as they did well in their courses.

The problem of providing medical care for the civilian population, especially in the mushroom communities around war industries, was proving to be a bigger one than that of supplying the Armed Forces. One doctor per 1,500 population was considered the minimum standard. The moving population necessitated the dislocation of doctors. This shortage is being met locally in many instances. Dr. Fitzgibbons described the way Portland and Vancouver solved their problem successfully. When it becomes necessary to import physicians, one obstacle that was proving almost insurmountable was the State licensure. It was suggested that these requirements be modified during the war so as to permit the Procurement and Assignment Service to move qualified doctors from one State to another if that seemed to be desirable. Gen. Parran said that if this problem could not be solved locally or by the States, the U. S. Public Health Service would have to detail P. H. doctors. This has been done already in several instances. The P. H. doctors either make no charge for their services or else pool their collections

and give it to a local medical undertaking such as Visiting Nurses, etc. In speaking of the Procurement and Assignment Service Dr. Lahey was unstinted in his praise of the local men who did all the leg work and received very little praise for it.

NOTE: Since this was written the addresses of Colonel Rankin, Admiral McIntire, Dr. Lahey, and General Hillman have been printed in the *J.A.M.A.*

The Doctor and the War

MUCH has been said of the duties and opportunities of the doctor in this war, but little is said of his sacrifices. In round numbers, one-third, and the best third at that, have gone to war; two-thirds are left to take care of the civilian population.

The third that have joined the Armed Forces are for the most part young men just entering upon their life work in preparation for which they have spent at least seven or eight years of hard and expensive training. In addition, many of them have fitted up offices and have just gotten established. To accomplish this, many have gone heavily in debt. For their country, they are not only undergoing hardships and facing danger but they are giving up careers they have looked forward to all their lives. The Army authorities say they will return them to civil life better doctors than they were, but this is open to question.

The two-thirds that are not wanted by the Armed Forces also have their sacrifices. Many of these had reached a period in life when they felt they could relax a bit and were limiting their work to a field that they particularly delighted in. Now they find themselves hardly adequate to meet the civilian needs and must take up again the day and night grind. The public owes it to these doctors to be as considerate of them as possible in not asking them to do unnecessary work, especially calls out of hours. The doctor owes it to the public to keep as physically fit as he can. He should get as much sleep as possible, not neglect his nourishment, and have a routine physical examination at stated intervals.

Department of Clinical and Medical Education
of the
Medical Society of Virginia

Industrial and Military Medicine.

In cooperation with the Committee on Industrial Health a series of postgraduate courses is now being planned in several sections of Virginia. The program will provide for afternoon, dinner and evening meetings in each of five centers comprising a circuit of a week. Speakers and clinicians of national and state prominence will be obtained to provide the instruction. Efforts are under way to get representatives of the American Medical Association and the United States Public Health Service to participate.

The following subjects among others have been suggested for treatment. Others will be added if local societies wish.

1. A Medical Program for Small Industries.
2. Job Placement of the Worker.
3. The State Health Department and Industrial Hygiene.
4. Industrial Dermatoses.
5. Handling Eye Injuries.
6. Supervision and Treatment of Cardiovascular Conditions.
7. Modern Burn Treatment.
8. Control of Syphilis in Industry.
9. Traumatic Wounds—Infections.
10. Industrial Back Cases—Low Back Sprains.
11. Shock.
12. Fractures and Dislocations.
13. Injuries to Hands and Wrist.
14. The Physicians Place in Industry.

15. Medical Control of Exposure to Toxic Chemicals.
16. Pneumoconiosis.

Courses will begin the latter part of February or early in March. There will be from three to five speakers on each program. Usually there will be two afternoon speakers, a dinner speaker, and two evening speakers. There will be provision for discussion following each speech or demonstration.

In order that programs may be prepared in advance, local societies are requested to notify the Executive Secretary at once if they wish to have a course for their members during the spring or early summer. When requesting the arrangement of a course, societies are also requested to suggest topics they would like to have discussed.

GEORGE B. ZEHMER,
Executive Secretary.

Societies

Williamsburg-James City County Medical Society.

The last meeting of this society was held Friday, November 13, at the Eastern State Hospital, Williamsburg, Virginia, the hospital acting as host to the society.

A delicious supper was served and a scientific program presented by members of the Staff of the Hospital. Included in the program was the presentation of the case of a polyneuropathy of obscure etiology and a case of prefrontal lobotomy.

Because of the tremendous influx of military and defense personnel in the Williamsburg area, the society is having difficulty in obtaining adequate meeting facilities.

I. S. ZFASS,
Secretary-Treasurer.

The Tazewell County Medical Society

Met on November 19 at Tazewell. The meeting was presided over by Dr. M. B. Crockett, president. Dr. Norman G. Patterson of Richlands gave a paper on "Medicine in China" and Dr. W. E. Baker of the State Venereal Disease Control Division showed a sound movie in technicolor on "Syphilis".

Because of very poor interest on the part of the clients of the FSA in joining the proposed medical care project, this project was dropped by the Society. It was felt by the members that it could not be handled successfully on the basis of the very small membership enrolled.

MARY E. JOHNSTON,
Secretary.

Richmond Academy of Medicine.

The annual business meeting of the Academy was held on December 8, at which time Dr. Arthur S. Brinkley succeeded Dr. Beverley R. Tucker as president. The following officers were elected: president-elect, Dr. Emmett H. Terrell; vice-presidents, Drs. T. Neill Barnett and G. R. Maloney. Drs. Harvey Haag and Don S. Daniel were elected to the board of trustees. The usual Christmas party followed in the dining room.

Roanoke Academy of Medicine.

At the meeting of the Academy, held on December 7th, the following scientific program was presented: The Local Application of Sulfonamide Drugs in Diseases of the Tracheobronchial Tree by Dr. Porter P. Vinson; and Observations on Low Back Pain and Sciatica from Pressure on the Lumbosacral Nerves by Dr. C. C. Coleman. Both speakers are from Richmond.

Dr. Paul Davis is President of the Academy and Dr. Ruth Barnhart, Secretary-Treasurer.

News

IMPORTANT NOTICE.

It is of the utmost importance that the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, immediately has the name of any doctor who really is willing to be dislocated for service, either in industry or in over-populated areas, and who has not been declared essential to his present locality. This is necessary if the medical profession is to be able to meet these

needs adequately and promptly. It is urgently requested that any physician over the age of 45 who wishes to participate in the war effort send his name to his State Chairman for the Procurement and Assignment Service. Dr. Hugh H. Trout, Roanoke, is chairman of this service for Virginia.

Change in Examination Dates.

Owing to the fact that medical schools of Virginia and many other states have advanced their graduation dates on account of the exigencies of war, the next examinations by the Virginia State Board of Medical Examiners will be held in Richmond, March 24-27, instead of June as heretofore. All applications must be complete in the hands of the secretary, Dr. J. W. Preston of Roanoke, at least ten days in advance of examinations.

Seaboard Medical Association.

The forty-seventh annual meeting of this Association was held in Wilson, N. C., December 1-3, under the presidency of Dr. George Erick Bell of Wilson. Officers elected are: President, Dr. C. Lydon Harrell, Norfolk; vice-presidents, Drs. M. A. Pittman, Wilson, N. C.; H. G. Ashburn, Norfolk; Leslie Lee, Kinston, N. C.; and O. R. Yates, Suffolk; and secretary treasurer, Dr. C. P. Jones (reelected), Newport News.

Dr. G. B. Arnold,

Who has been connected with the Army Medical Corps as Major since July, 1942, has been discharged from the service because of minor physical disability and as of December 1 resumed his duties as Superintendent of the Lynchburg State Colony.

Dr. D. L. Harrell, Jr.,

Who has been Superintendent of the Lynchburg State Colony during Dr. Arnold's absence, has returned to his former position as Superintendent of the Petersburg State Colony. Dr. Harrell has also been appointed Acting Clinical Director of the Central State Hospital at Petersburg, on a part-time basis pending the return of Dr. L. X. Kolipinski who occupied this position before entering the Army Medical Services.

The State Hospital Board

Announces the approval of a grant from the State Board of Education, through Dr. B. H. Van Oot and Mr. Harold I. Baumes, Supervisor and Assistant Supervisor, respectively, of Trade and Industrial Education. Emphasis in the case of this grant will be placed on service training for hospital attendants and nurses. It is hoped that qualified instructors can be secured and that this work can begin by January 1, 1943. Preliminary to this course of instruction, a survey of the nurse and attendant situation of each of the four mental hospitals will be made in December by Mrs. Laura W. Fitzsimmons of the American Psychiatric Association, and Mrs. Lela S. Anderson, Supervisor of Nurse and Attendant Training for the State Department of Mental Hygiene and Hospitals.

News From University of Virginia, Department of Medicine.

Dr. Alfred Chanutin, Professor of Biochemistry, has received a research grant of $3,000 from the Nutrition Foundation for continuation of his investigation of Fat Metabolism in the "nephritic rat".

The ninth annual post-graduate course in Ophthalmology and Otolaryngology was held at the Medical School during the four days, December 8 to 11. The following lecturers appeared on the program; Dr. H. Marshall Taylor, Jacksonville, Fla.; Dr. D. E. Staunton Wishart, Toronto University; Dr. George E. Shambaugh, University of Illinois; Dean Albert C. Furstenberg, University of Michigan; Dr. Gayle Crutchfield, University of Virginia; Dr. Francis H. Adler, University of Pennsylvania; Dr. George C. Ham, University of Virginia; Dr. Raymond R. Pfeiffer, Presbyterian Hospital, New York City; Dr. Vincent W. Archer, University of Virginia; Dr. Edmund B. Spaeth, University of Pennsylvania; and Dr. Grady Clay, Emory University.

On Monday, November 15, Dr. S. A. Vest, Jr., Associate Professor of Urology, spoke before the Rockingham County Medical Society. His subject was "Endocrine Problems in Urology".

The Exchange Club of Charlottesville has made a gift of $1,000, part of the proceeds from the first Apple Festival, to the William James Rucker Convalescent Home for Children.

Dr. Robert Funsten, as member of the National Committee appointed by the American Orthopedic Association and the American Academy of Orthopedic Surgeons to investigate the Sister Kenny treatment for infantile paralysis, attended the initial meeting in Minneapolis during the week of November 20 to 27.

On Tuesday, December 8, 1942, a motion picture "The Effects of Swimming on the Ear" was presented by Dr. Marshall Taylor of Jacksonvlle, Fla., in the Amphitheater.

On Thursday, December 10, 1942, the Albemarle County and Piedmont Medical Societies met in Room 335 of the Medical School Building. Dr. Lyman Weeks Cresmon of New York City was guest speaker. His subject was "Refrigeration Anaesthesia".

Married.

Dr. James Bannister Stone Perrow and Miss Martha Louise Turner, both of Lynchburg, November 28. Dr. Perrow is a graduate in medicine of the University of Virginia in 1935.

Dr. Thomas Foster Wheeldon, Richmond, and Miss Gladys Pearle Jenkins, Frostburg, Md., December 26.

Dr. David Samuel Garner, Roanoke, and Miss Willye Mae Webb, Delray Beach, Fla., December 2nd. Dr. Garner is a graduate of the Medical College of Virginia in 1933.

Dr. D. P. Scott

Has been named chairman of the re-organized Lynchburg Tuberculosis Association.

Personnel Notes from Virginia State Department of Health.

Under the recently inaugurated Personnel Lend-Lease Plan, the following U. S. Public Health Service medical personnel have been assigned to duty in Virginia:

Henry B. Makover, Passed Assistant Surgeon (Reserve), U. S. Public Health Service, assigned to the staff of St. Vincent's Hospital, Norfolk, Va.

Catherine W. R. Smith, M. D., appointed Assistant Physician, Bureau of Maternal and Child Health, State Health Department, Richmond, Va.

Dora E. Brault, M. D., assigned to the staff of St. Vincent's Hospital, Norfolk, Va.

Dr. Vernon A. Turner, health officer of Augusta County, has been granted a leave of absence for the duration that he may serve in the U. S. Army, which he entered with the rank of captain in the medical corps. Dr. Thomas Scarlett, Rockingham County health officer, will take over part of Dr. Turner's work, and Dr. H. M. Wallace of Greenville will continue as assistant county health officer of Augusta.

Dr. M. K. Underwood,

Class of '37, Medical College of Virginia, recently located at Belhaven, N. C., announces that he is now in Rolla, Mo.

The American College of Physicians,

Board of Regents, has announced the cancellation of their 1943 Annual Session, which was scheduled to be held in Philadelphia, April 13-16. This action was taken after thoughtful consideration of all factors involved, including an intimation from the Secretary of War and the Office of Transportation that larger national medical groups should not plan meetings at the time set; a growing difficulty in getting speakers and clinicians of top rank to maintain the usual standards of the program; prospect of greatly reduced attendance, because civilian doctors are faced with too great a burden of teaching and practice already; a decreasing active membership, due to approximately 25 per cent of all doctors being called to active military service. President James E. Paullin announced, however, that all other activities of the College would be pursued with even greater zeal, and that the College would especially promote regional meetings over the country and organize post-graduate seminars in the various military hospitals for doctors in the Armed forces.

Urology Award.

The American Urological Association offers an annual award "not to exceed $500" for an essay (or essays) on the result of some specific clinical or laboratory research in Urology. The amount of the prize is based on the merits of the work presented, and if the Committee on Scientific Research deem none of the offerings worthy, no award will be made. Competitors shall be limited to residents in urology in recognized hospitals and to urologists who have been in such specific practice for not more than five years.

The selected essay (or essays) will appear on the program of the forthcoming meeting of the American Urological Association, May 31-June 3, 1943, Hotel Jefferson, St. Louis, Mo.

Essays must be in the hands of the Secretary, Dr. Thomas D. Moore, 899 Madison Avenue, Memphis, Tenn., on or before March 1, 1943.

The National Society for the Prevention of Blindness

Announces that a prize of $250 will be awarded

for the most valuable original paper during 1943 adding to the existing knowledge about the diagnosis of early glaucoma. Papers may be presented by any ophthalmologist, student in ophthalmology or research worker of the Western Hemisphere and may be written in English, French, German, Italian, Spanish or Portuguese, but those written in the last four languages should be accompanied by a translation in English. Papers should be in the office of the National Society for the Prevention of Blindness, 1790 Broadway, New York City, by September 15, 1943.

Dr. Walter Glenn Lewis,

Class of '38, Medical College of Virginia, who practiced for some time at Elon College, N. C., is in the Service with the rank of Captain in the Medical Corps and is at present on the surgical staff of the U. S. A. Station Hospital, at Fort St. John, B. C., Canada.

Vitamin Films in Color.

During the past year the three 16-mm. silent motion pictures in color, describing certain vitamin deficiency diseases, which were made available by Eli Lilly and Company, Indianapolis, for showing before medical groups under sponsorship of a physician, have been in continuous demand. One film deals with deficiency of thiamine chloride (beriberi), another with nicotinic acid deficiency (pellagra), and the third with ariboflavinosis. To meet increasingly frequent demands for the films, additional new prints have been placed in circulation and are now ready for loan. The major part of all films concerns the clinical picture presented by the patient with reference to treatment by diet and specific medication. They do not contain advertising of any description, nor is the name of Eli Lilly and Company mentioned.

The films were made at the Nutrition Clinic of the University of Cincinnati at the Hillman Hospital, Birmingham, Alabama, where studies were initiated in 1935, under the joint auspices of the Department of Internal Medicine of the University of Cincinnati and the University Hospitals of Cleveland. Subsequently, these investigations became a co-operative project between the Departments of Medicine of the University of Cincinnati and the University of Alabama, and the Department of Preventive Medicine and Public Health of the University of Texas.

Dr. S. E. Massey,

A member of the Medical Society of Virginia and formerly located in Tazewell County, but more recently of Bramwell, W. Va., and Lakeland, Fla., is now at his winter home in Florida after having been a patient for several weeks at St. Elizabeth's Hospital, Richmond.

Congress on Industrial Health.

The fifth annual congress, sponsored by the Council on Industrial Health of the American Medical Association, will be held January 11-13 at the Palmer House in Chicago. The program has been worked out to show how industrial health services can be extended and improved. There will be a symposium on Infections in Industry, and one session has been assigned to industrial medicine and the emergency. On the last day there will be a round table on Nutrition of Industrial Workers.

These meetings are open to all physicians and others interested in industrial health. There is no registration fee.

Dr. Emmett V. Richardson,

Who practiced at Marion before being ordered to active duty in the Army in April, 1941, was recently promoted to the rank of Lieutenant Colonel in the Medical Corps. He has been connected with the Station Hospital, Camp Lee, since entering the Service.

Dr. Linwood D. Keyser,

Roanoke, was elected a Corresponding Foreign Member of the Argentine Society of Urology, at its annual meeting in Buenos Aires in September, in recognition of original research in this field.

Dr. E. W. McCauley,

Class of '32, Medical College of Virginia, who practiced at Rainelle, W. Va., is now a Captain in the Medical Corps and serving with the 66th Medical Regiment at Camp Barkley, Texas.

"Doctors at War".

The American Medical Association and the National Broadcasting Company, in official cooperation with the United States Army Medical Department and the United States Navy Bureau of Medicine and Surgery, will present over the NBC hookup a radio drama entitled "Doctors at War". This will begin on December 26th at 5:00 P. M., E.W.T., and will be continued for twenty-six weeks, being broadcast on each Saturday at the same time.

Occupational Therapists Needed.

In response to the increasing demand for Occupational Therapists in war time, The Richmond Professional Institute of the College of William and Mary opened a Department of Occupational Therapy in September, 1942. Occupational Therapy, a comparatively new profession, has grown so rapidly since the last war that it has been impossible to supply civilian needs. To help fill this need, the Department of Occupational Therapy in admitting a new group of students in February, 1943. It is hoped that those who recognize the value of Occupational Therapy, and the part which it can and must play in the post war reconstruction, will do all that is possible to interest young women who might be available for service.

Emergency Medical Unit in Lynchburg.

Dr. Bernard H. Kyle has been appointed by the U. S. Public Health Service to direct an emergency medical unit for Lynchburg to care for persons evacuated to that place in case of an attack. Dr. D. P. Scott will be assistant chief. Others named to assist these are: Dr. Elisha Barksdale, Dr. D. M. Thomasson, Dr. John W. Devine, Dr. S. E. Oglesby, Dr. W. Clyde Adkerson, Dr. J. A. Wilkins, Dr. Powell Dillard, Dr. J. H. Hoskins, Dr. H. C. Shotwell, Dr. R. D. Caldwell, and Dr. Walter F. Thornton.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Anderson & Baylous—When doctors are rationed.

Beaumont & Dodds—Recent advances in medicine. 10th ed.

Bennett, G. A. *et als*—Changes in the knee joint at various ages.

Bourne & Williams—Recent advances in obstetrics and gynecology. 5th edition.

Clark, P. F. & A. S.—Memorable days in medicine.

Friedman, R.—Scabies—civil and military.

Gessell, A.—Developmental diagnosis.

Lambie, T.—A doctor without a country.

Langdon-Brown, W.—From witchcraft to chemotherapy.

Piney & Wyard—Clinical atlas of blood diseases.

Werner, A. A.—Endocrinology—clinical application and treatment.

Wintrobe, M. M.—Clinical hematology.

Obituaries

An Appreciation of Dr. Littleberry Stainback Foster.

Dr. Littleberry Stainback Foster, for eight years superintendent of the Eastern State Hospital at Williamsburg, was born in Mathews County, Virginia, February 23, 1856. He was the son of Captain John Foster and Nancy Foster of Mathews County. His father was owner and captain of his own ship in which he twice sailed around the world, doing an extensive merchant shipping business in the far east and other places. On one of these trips Captain Foster discovered in the Pacific a small island—Marquis of Weeks—claimed it in the name of the United States and planted there the United States flag. Record of this discovery may be found in the archives of the War Department in Washington.

Dr. Foster's education was in private schools of his native county, Randolph Macon College, University of the City of New York, the Royal College of Physicians and Surgeons and the Royal Infirmary at the University of Edinburgh, Scotland. He first practiced medicine in Mathews County, where he was prominent not only as a physician but as a citizen, serving at various times as superintendent of schools, member of the Board of Directors of the Eastern State Hospital, and a member of the State Board of Medical Examiners.

On February 1, 1899, he assumed the superintendency of the Eastern State Hospital at Williamsburg, which position he held till February 8, 1907. At Williamsburg he was active in civic and church affairs, serving for a number of years on the vestry of Bruton Parish Church. In 1909 Dr. Foster opened an office in Norfolk and resumed private practice, specializing in psychiatry. He was a member of the Medical Society of Virginia, the Seaboard Medical Association of Virginia and North Carolina, and the American Medico-Psychological Association (American Psychiatric Association).

Dr. and Mrs. Foster, who was Agnes Dixon of Savannah, Georgia, had three sons and two daughters: Littleberry S., Jr., Mary L. (Mrs. Charles Rowan), W. Dixon, Lucile, and Merritt W. Foster.

From the annual reports written by Dr. Foster, one learns that he wrote well and was careful in

his use of words. His reports indicate that he advocated many years in advance of their adoption in the Virginia hospitals such improvements as separate departments for the epileptics and the tuberculous, a library for patients, an industrial shop ("not as a profitable business but as a valuable means of treatment"), a training school for nurses, and the purchase of 300 or 400 acres of land outside of the city on which to colonize some of the custodial care class of patients. In 1904 he wrote and published in his annual report an important contribution, entitled an "Historical Sketch of the Eastern State Hospital".

Dr. Foster's last years were spent in retirement at his home in the City of Williamsburg, where he died September 23, 1942, in his eighty-seventh year.

It is well that we sometimes pause to give credit to the hospital superintendents of an earlier day. Not infrequently do we discover that one of them here and one of them there is responsible for the firm foundations upon which rest the admirable structures we are wont to look upon as our own.

HUGH C. HENRY, M.D.

Dr. Leverett Saltanstall Early.

Prominent physician of Petersburg, died December 22, after an illness of several weeks. Dr. Early, who was sixty-eight years of age, graduated from the former University College of Medicine, Richmond, in 1898, and shortly thereafter located in Petersburg where he had since made his home. He was active in medical, church and civic affairs of his community, a World War veteran, and served twice as commander of Petersburg Post No. 2 of the American Legion. Dr. Early was also a member of the Sons of Confederate Veterans, and a local surgeon for the Norfolk and Western and Seaboard Air Line Railways. Two sisters survive him.

Dr. John Edward Knight Flannagan,

Marion, died of a heart attack on December 1st. He was born in Charlottesville in 1899 and graduated from the University of Virginia, Department of Medicine in 1925. Dr. Flannagan specialized in tuberculosis and for the past several years had been medical advisor on the staff of the Lee Memorial Hospital and the Southwestern State Hospital at Marion. He had formerly been located at the Catawba and Mt. Regis Sanatoriums. His father was the late Dr. Roy Knight Flannagan who died in June, 1942.

Dr. William Massie Tunstall,

For fifty years a general practitioner of medicine in Nelson County, died at his home near Lovingston, November 24th, after a brief illness caused by a cerebral hemorrhage. Born in Lynchburg, September 21, 1869, he took his premedical education at the University of Virginia and graduated in medicine at the University of New York in 1892. He did post-graduate work at the New York Polyclinic.

Dr. Tunstall was a charter member of the Nelson County Medical Society and one of the most regular attendants at the meetings of that society, serving as its president for a number of years and always taking a great deal of interest in medical affairs and public health in the county. As chairman of the Board of Supervisors he was also chairman of the county board of health. He was a member of the State society and the Association of Surgeons of the Southern Railway System, having served as a local surgeon for that company for forty-two years.

The Nelson County Medical Society has lost a valued and esteemed member in the passing of Dr. Tunstall and its members go on record expressing their sincere sorrow and regret and extending their sympathy to his surviving widow and children.

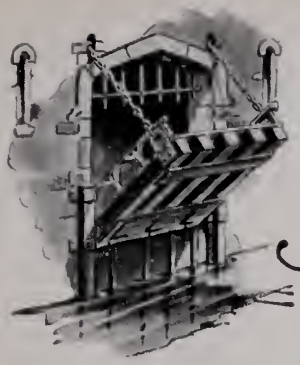
LYDDANE MILLER, *President,*
J. F. THAXTON, *Secretary,*

Dr. George Hobson Rose.

We have only recently been advised of the death on July 7th, last, of Dr. Rose, retired physician of Zanoni. Dr. Rose graduated from the University of Pennsylvania in 1880 and had been a member of the Medical Society of Virginia since 1888.

Dr. Gray Godwin Holladay,

Portsmouth, died November 26th. He was seventy-two years of age and a graduate of the Bellevue Hospital Medical College, New York, in 1893. Dr. Holladay was in the Naval Medical Corps during the first World War. He was surgeon for the Seaboard Air Line Railway for a number of years and also served as Portsmouth City coroner. Dr. Holladay had been a member of the Medical Society of Virginia for a number of years.



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February, 1943

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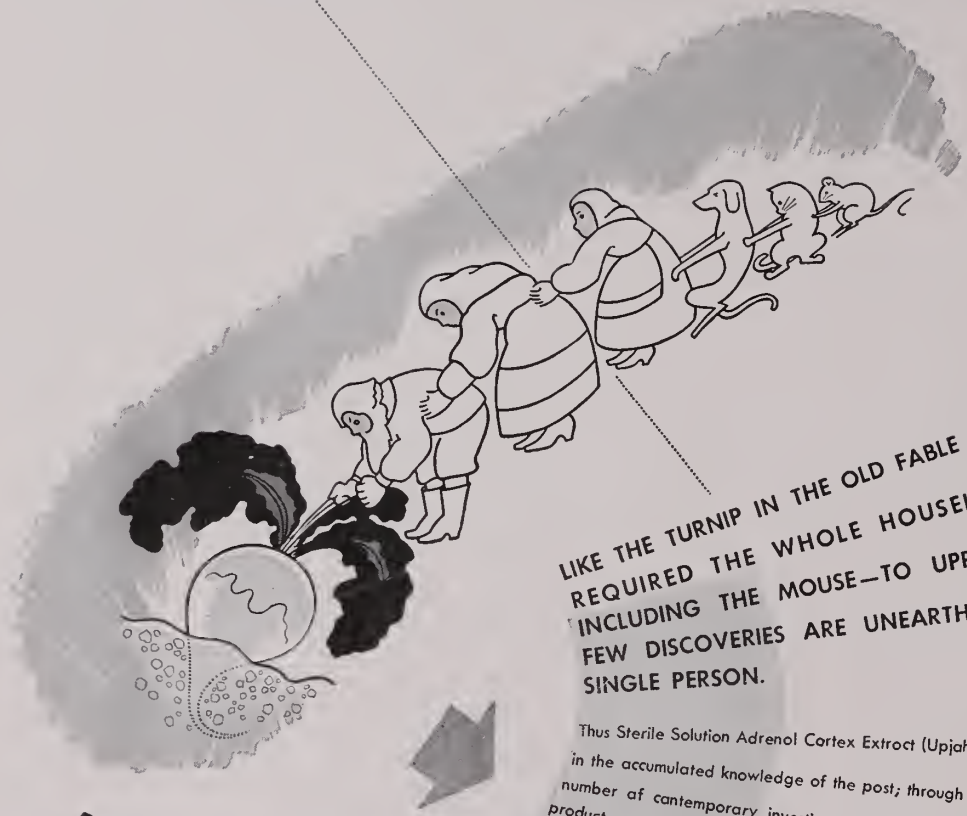

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Guest Editorial

The Doctor and Birth Control.

FEW subjects have caused such bitter polemic as birth control. On the one hand, an influential and nation-wide group, composed largely of women philanthropists, insists that every wife should have contraceptive advice regardless of medical, economic or social reason and that she herself should be the sole arbiter of when pregnancy shall take place. At the other extreme stands an irreconcilable and powerful body, world-wide in its affiliations, which holds that contraceptive devices should never be used, even by sick women in whom pregnancy would mean certain death. Between these two viewpoints all gradations of opinion are met.

Where is the doctor to stand in this controversy? That he must take *some* stand is clear. The problem has been brought home to every practitioner in Virginia by the recent action of the State Medical Society endorsing contraception when medically indicated; this is in accord with similar action taken by the American Medical Association in 1937 and with resolutions passed by several state societies. Moreover, with the increasing attention given to birth control in the lay press, more and more women will be asking for such advice. But there is a much more important reason for insisting that the doctor take a stand on this issue: whether he likes it or not he faces here an important responsibility, one that bears not only on the immediate health of his patients but on the whole future pattern of family life in the community he serves.

What is this responsibility?

It is a responsibility which has hitherto been accorded little place in medical practice and one which many doctors are still hesitant to assume. It is the responsibility of being the judicious, far-seeing, but friendly counsellor of his younger married patients in family planning. In most instances this will entail laying stress, either by innuendo or direct statement, on the desirability of having children, but in a few cases it will call for family limitation. It is thus a two-fold responsibility based on the belief that *the trouble with birth control is likewise two-fold: there is too little of it and too much.* There is too little of it among women suffering from hypertension, heart disease, tuberculosis and the like; too little among the feeble-minded continually begetting more feeble-minded; too little among the indigent. But, contrariwise, there is surely too much birth control employed by those American women who spend a total of $200,000,000 a year for contraceptive materials which they purchase through some 300,000 outlets including 57,000 drugstores. Similarly, it would appear that there is excessive dissemination of birth control advice by certain of our large contraceptive "clinics", for in 1940 the 4,790 "patients" seen at one of these had had, on the average, only 0.7 children each after

more than four years of married life. To correct the "too little" and the "too much",—this is the problem and the responsibility.

This vitally important problem is now in the lap of the medical profession. And rightfully so, for no one else can meet the many issues involved. Only the "doctor-patient relationship" is of that intimate, confidential nature which will permit discussion of the topics which must be discussed. Only the doctor has at his disposal the means of controlling conception safely and effectively. And only he, as a rule, can give advice on family planning which will be gladly received and carefully weighed. But, if this be true, what is his advice to be? On what grounds should birth control instruction be given?

In an effort to open this question, the opinion of the 192 members of the National Medical Council on Birth Control was recently sought concerning the advisability of endorsing the following policy:

> The National Medical Council on Birth Control approves of giving contraceptive advice to the following groups of married women *only:*
>
> 1. Women with organic diseases as attested by a reputable physician. By organic disease is meant: Chronic hypertension, rheumatic heart disease, active or recently active pulmonary tuberculosis, diabetes mellitus, syphilis, chronic pyelitis and similar conditions in which definite disease processes are demonstrable.
> 2. Women who have given birth to defective children or who are suffering from a disease known to be hereditary.
> 3. Women who have been delivered by cesarean section or who have undergone a major surgical operation during the previous year.
> 4. Women who have given birth to an infant within the past two years or who have had an abortion within the previous year.
> 5. Women who have three or more living children.
> 6. Women who are suffering from economic distress as attested by investigation.
>
> The National Medical Council on Birth Control, although insisting that contraceptive advice should be readily available for all the above groups, disapproves of the indiscriminate dissemination of such advice whether by physician, clinics or drug stores. In the case of drug stores, it believes that the indiscriminate sale of contraceptive materials may become a disservice to the public and would endorse accordingly a move to place the sale of contraceptive materials on a prescription basis.
>
> The National Medical Council on Birth Control, and its affiliated state and local committees accept as a major phase of its program, the encouragement of parenthood wherever health and economic conditions permit, particularly among the newly married and other childless couples. Pre-marital advice, marriage counsel and treatment of sterility should be made an essential part of every service program so long as they are under the strict supervision of qualified medical, psychiatric and social service staffs.

At the present writing ninety-five replies to the questionnaire have been received, representing the opinions of leading medical men, mostly obstetricians and gynecologists, in thirty-two states. *The great majority of the group, eighty, voiced either complete approval of the statement or approval qualified by such minor alterations as would have no effect on meaning.* Of these eighty, three volunteered particular endorsement of placing the sale of contraceptives on a prescription basis. Three members of the Council gave equivocal answers, leaving twelve who disapproved. Of these twelve, two regarded the indications as too liberal, citing items 4, 5 and 6 as especially questionable. *Ten of the replies voiced opposition because the indications were too strict.* Most of these ten rather leaned to the viewpoint, as one phrased it, that "this is still a free country and so parenthood should be a free choice". Another, the head of a large university department of obstetrics and gynecology, wrote: "Limitation to medical indications is not practicable. Surely you don't wish to saddle the physician with the enforcement of relative contraception prohibition. It just won't work". Four of these ten objectors specified particular disapproval of placing the sale of contraceptives on a prescription basis.

While these replies show a wide range of attitude and, as a whole, lend themselves to various interpretations, one conclusion would seem inescapable, namely, that a strong body of opinion exists among physicians interested in birth control that this important agent should not be disseminated in "assembly-line" fashion but should be restricted ordinarily to certain broad indications. Naturally, in a field with such wide medical, social and economic ramifications, iron-clad regulations are impossible as well as unwise; and much must always be left to the judgment of the physician and to the peculiar needs of the individual case. Nevertheless, the indications as listed would seem liberal enough to include the vast majority of cases in which contraception is really needed, and, at the same time, restrictive enough to make some inroads, perhaps, on the abuse of the agent. To what degree the latter goal can be approached will depend, in no small measure, on the willingness and adroitness of the doctor in encouraging childbearing in suitable cases. It is hoped, in any event, that these indications will serve as a reminder that the physician does face here an important responsibility. If, as a consequence, he gives this problem his serious, constructive thought, some good will have been achieved.

NICHOLSON J EASTMAN.*

*EDITOR'S NOTE: Dr. Eastman is Professor of Obstetrics at Johns Hopkins University and chairman of the National Medical Council of the Planned Parenthood Federation of America.

AMEBIC DYSENTERY: ITS RECOGNITION AND TREATMENT A CLINICAL DISCUSSION*

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Durham, North Carolina.

For many years, amebic dysentery has been regarded as a tropical or sub-tropical disease. Our experiences[1,2] and the reports of others[3,4] have led us to the conclusion that such an opinion is totally erroneous. For illustration, since the opening of Duke Hospital in 1930, one hundred patients having active amebic infection have been studied, either on the ward or in the Out Patient Clinic. The term "active amebic infection", as distinguished from the carrier state, is used to include only those patients having an active diarrhea with blood, mucus, and trophozoites in the stool, or those having liver or lung abscess with or without disturbance of bowel function.

The prevalence of the carrier state has been emphasized by many writers, particularly by Craig[5] and Foust,[6] who report that 10 to 20 per cent of the population in the extreme southern states have cysts of E. histolytica in their stools. These patients may or may not have symptoms referable to their infection. Carriers constitute an important public health problem but, because the cysts of E. histolytica can be identified only by specially trained observers, this aspect of the subject is purposely omitted from this discussion.

Although amebic infection is widespread throughout this country, it is much more prevalent in tropical zones. With hundreds of thousands of our troops in foreign lands and many of them in tropical regions, it becomes all the more important that the profession should become thoroughly conversant with amebic infection in all of its manifestations; we should know what symptoms should lead one to suspect its presence; what procedures are required in establishing the diagnosis and, finally, what form of therapy is most effective.

From a practical standpoint, amebic infection may be considered under three general headings: 1) The cyst carrier; 2) Amebic dysentery (colitis); 3) Complications, such as liver, lung or brain abscess. Obviously, such a classification is more or less artificial. *The cyst carrier may have a mild diarrhea or develop a liver or lung abscess without appreciable disturbance of bowel function.* Likewise, amebic colitis and liver or lung abscess may coexist in the same patient. However, for conveni-

*From the Department of Medicine, Duke University School of Medicine, Durham, N. C.
Presented by invitation before the Medical Society of Virginia at Roanoke, October 6, 1942.

ence, these three phases of amebic infection may be considered separately.

THE CYST CARRIER:

This condition is frequently asymptomatic or the patient may complain of indefinite right lower quadrant pain and may have a mild diarrhea alternating with constipation. Digestive disturbances of varying degree are reported. The history of the case is vague at best and the physical examination is likewise of no significance, except possibly for the finding of slight tenderness over the cecum. The diagnosis must necessarily rest upon the demonstration of cysts of E. histolytica in the stool and, as has been pointed out, this requires the opinion of a trained observer. Although not questioning for a moment the importance of this group of patients, still from a practical standpoint the practicing physician is much more concerned with those patients having the active disease.

AMEBIC DYSENTERY (COLITIS):

The diagnosis of amebic dysentery depends upon the correct evaluation of the history, the physical findings and the laboratory evidence in any given case, and upon the response to specific therapy.

History: Any patient giving a history of a bloody diarrhea should at once be suspected of having amebic dysentery. The onset usually is gradual and the course of the disease is characterized by remissions and relapses. In our experience, blood and mucus were reported in nearly every patient having an active diarrhea. Abdominal pain of varying severity is common and weight loss may be marked. Fever is unusual and the patient frequently can remain at work, though from time to time he may be incapacitated.

Unfortunately, similar histories can be elicited from patients having chronic idiopathic ulcerative colitis, carcinoma of the colon, intestinal polyposis and occasionally in tuberculosis of the intestine. In acute cases bacillary dysentery also must be considered. From the history alone, therefore, the disease may be suspected but cannot be diagnosed.

Physical Examination: The examination in these patients is apt to be disappointing. Occasionally one may demonstrate tenderness over the cecum but this is not striking. Digital rectal examination usually is negative, but should always be done, since it may reveal the presence of carcinoma or polyposis.

The urine and blood show nothing of significance. A secondary anemia is common and occasionally leukocytosis is present.

The diagnosis actually rests upon three procedures: 1) Stool examination; 2) Proctoscopic (sigmoidoscopic) study, and 3) x-ray studies after a barium enema.

Stool Examination: It is just as reprehensible to fail to examine the stools of patients having a bloody diarrhea as to omit a urinalysis in patients complaining of frequency or burning on urination. In amebic dysentery the stool usually is soft or mushy and there is gross mucus and blood. Microscopic examination of freshly passed mucus usually will show the motile form of E. histolytica. The pseudopods containing clear cytoplasm and ingested red cells can easily be identified. The organism, as a rule, moves its center of gravity across the field. In general, there are few white cells in the stool and when one sees a specimen loaded with pus, it usually means that the patient does not have amebic dysentery.

Proctoscopic (sigmoidoscopic) Examination: It goes without saying that any physician will examine the throat of a patient thought to have diphtheria, or will do a speculum examination when carcinoma of the cervix is suspected, but how few physicians will examine by direct inspection the rectal mucosa of patients having a bloody diarrhea! Yet, proctoscopic or sigmoidoscopic study will give the answer to most of the problems in this group of cases. The procedure itself is easy. The examination can be carried out in the office or even in the home. With simple and inexpensive equipment a satisfactory study can be made of any patient who can assume the knee-chest position. The ulcers are discrete and irregular, varying in size from one to five millimeters and covered by grayish white mucus. The edges are sharp and tend to be undermined with the intervening mucosa relatively normal, but it may appear slightly edematous. There is little or no inflammatory reaction surrounding these ulcers. Indeed, the appearance of these ulcers is so characteristic as to be diagnostic in most cases. The mucus covering the ulcers should be removed by an applicator and examined at once, after adding a drop of normal saline. In our experience, motile amebae can be demonstrated in this way in practically all cases having active infection.

Barium Enema: X-ray of the colon is important in all patients having a bloody diarrhea, but is use-

ful in diagnosis of amebic dysentery largely by excluding diseases such as carcinoma of the colon, polyposis or idiopathic ulcerative colitis. There may be some spasm and irritability of the cecum, but as a rule amebic dysentery cannot be diagnosed by x-ray.

Differential Diagnosis: The diseases most likely to be confused with amebic dysentery are: 1) Chronic idiopathic ulcerative colitis; 2) Carcinoma of the rectum; 3) Intestinal polyposis, and rarely 4) Tuberculosis of the intestine. In acute cases bacillary dysentery also has to be considered.

As has been mentioned above, the history is of little value in differentiating between most of these conditions. Naturally, if the disease has been present for years, carcinoma of the colon can be excluded. Likewise, an explosive onset with fever and prostration suggests bacillary dysentery.

Ulcerative colitis with the granular "sandpaper" mucosa, containing pin point or larger ulcers and no normal mucosa whatever can be recognized by proctoscopic examination at a glance. Likewise, polyposis or carcinoma in the lower rectum can be identified at once. The x-ray will also give the diagnosis in such cases. As has been emphasized, the diagnosis must rest upon stool and proctoscopic examination together with barium enema x-ray studies. The intelligent use of these three procedures will give the diagnosis in practically every case.

HEPATITIS OR LIVER ABSCESS:

Complications, such as hepatitis and liver or lung abscess, are fairly common; they occurred in 11 per cent of our patients. It is a safe rule to follow that any patient having amebic dysentery who develops a fever should be suspected at once of having one of these conditions.

History: It should be emphasized that patients may develop liver or lung involvement without ever having a diarrhea. In these patients the onset is gradual, the patient complaining of malaise, vague right upper quadrant pain and later chills and fever. Pain referred to the right shoulder or neck may occur. With extension through the diaphragm pleural pain is to be expected and lung abscess or an empyema may develop at any time.

Physical Findings: The patient usually presents a picture of an acute febrile illness. Jaundice is seen only occasionally. Tenderness over the liver, especially to fist percussion, is the rule and a fixed diaphragm on the right can be demonstrated in many cases. The liver may or may not be enlarged. Proctoscopy may give the answer by demonstrating typical ulcers, but a normal rectal mucosa does not rule out amebic infection.

A leukocytosis is to be expected. Fluoroscopic study will show a high diaphragm on the right, which does not move on respiration. A flat plate of the abdomen is rarely helpful. Occasionally one is justified in visualizing the liver by the use of thoratrast. The finding of motile forms or cysts of E. histolytica in the stools will confirm the diagnosis, but unfortunately one is rarely able to demonstrate them.

Lung Abscess: This merely means the extension of the process through the diaphragm and can occur in any case of liver involvement. The picture is that of the usual lung abscess with the one exception, that the sputum is anchovy colored and may contain motile organisms.

TREATMENT:

The cyst carrier is largely a public health problem. The presence of cysts in the stool probably means tissue invasion and that the patient may develop active disease at any time. What factors prevent most of these patients from having acute amebic dysentery or liver abscess are not known. Our experience has led us to the belief that dietary deficiencies may play an important part. We have followed patients who continue to relapse until an underlying deficiency of the B complex is corrected. Certainly every effort should be made to rid the cyst carrier of his infestation. A well balanced diet supplemented by vitamin therapy is important. Then one should use any of the specific drugs which will be discussed under the treatment of the active forms of the disease.

TREATMENT OF AMEBIC DYSENTERY:

Emetin is the time honored drug in the treatment of amebic dysentery. However, it is known to be toxic and since spectacular recoveries are the rule after treatment with certain drugs which are nontoxic, it has been our practice to resort to emetin only when the patient fails to recover with other forms of therapy, except in cases of liver and lung abscesses, as described below.

Whenever possible, the patient should be hospitalized. A well balanced diet supplemented by large doses of nicotinic acid, thiamin and riboflavin

is given. Specific therapy consists of the following: 0.25 gram carbarsone by mouth twice daily for ten days and 5 grams of yatren (chinofon) in 250 c.c. of water by retention enema daily. The results of the treatment are striking. The diarrhea promptly ceases, the appetite returns and within twenty-four to forty-eight hours the patient experiences a marked improvement in his sense of well-being. Examination of the rectal mucosa will show rapid healing of the ulcers, which usually disappear entirely within five to seven days.

Unfortunately, relapses are frequent, especially in patients subsisting upon a deficient diet. It is important, therefore, to correct their deficiency by diet and vitamin therapy after leaving the hospital and also to repeat the course of carbarsone and yatren after a two-week rest period.

TREATMENT OF LIVER AND LUNG ABSCESS:

When complications such as hepatitis, liver or lung abscess are suspected, the patient should be hospitalized at once and be given immediately one-half grain (32 mgm.) of emetin by hypo twice daily for seven to ten days. Because of the toxicity of the drug the patient should be watched carefully, paying particular attention to the cardiovascular system. General supportive measures, usually employed in the treatment of the acutely ill patient, are instituted. Surgical drainage of the abscess may be required but the decision to drain will necessarily depend upon the situation in each individual case.

In summary, then, amebic infection is not at all uncommon in temperate climates. Any patient giving a history of a bloody diarrhea should at once be suspected of having amebic dysentery. Microscopic examination of a freshly passed stool, or material obtained by proctoscopic examination, usually reveals the presence of E. histolytica. The proctoscope is easy to use and a most valuable aid in differential diagnosis.

The response to therapy is spectacular but relapses are common. A well balanced diet supplemented by vitamins of the B complex seems to aid in the prevention of relapses.

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RELATIONSHIP OF HYPERTENSION TO SURGICAL DISEASES OF THE URINARY TRACT*

A. I. DODSON, M.D., F. A. C. S.,
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Within recent years many experimental clinical and pathological observations have been made illustrating the association of renal disease with elevation of the blood pressure.

The experiments of Goldblatt[1] show the relationship of renal ischemia to elevation of the blood pressure. By constricting one or both renal arteries he and his co-workers produced hypertension in experimental animals. In cases of unilateral vascular occlusion the elevated blood pressure was transient but in bilateral occlusion permanent malignant hypertension occurred. Elevation of the blood pressure in experimental animals has also been produced by Harrison, Maison, Resnic and Rainey[2] by ligation of the ureters.

Kimmelstiel and Wilson[3] noted pyelonephritic changes in a large percentage of the kidneys of hypertensive individuals coming to autopsy and Weiss and Parker[4] state that there is a great tendency to severe hypertension in patients with pyelonephritis. On the basis of post-mortem records of Boston City Hospital they estimate that pyelonephritis is responsible for at least 15 to 20 per cent

*Read at the monthly meeting of the Academy of Medicine, Nashville, Tenn., November 18, 1940.
From the urological departments of St. Elizabeth's Hospital and Medical College of Virginia, Richmond, Va.

of malignant hypertension. Barney, in discussing the paper of Weiss and Parker, stated that he had reviewed the histories of a number of patients operated upon for pyelonephritis and pyonephrosis and found that approximately 25 per cent had definite hypertension. The ages of the patients varied from twelve to sixty years. In fifteen cases blood pressure readings were taken routinely in the clinic following nephrectomy and a drop in blood pressure averaging 30 points systolic was noted. These patients were followed in the clinic for from four months to nine years.

Longcope[5] noted that in bilateral pyelonephritis an increase in the blood pressure was the rule as the disease progressed. Recently Maher and Wasika[6] in reviewing the case records of 600 patients with hypertensive vascular disease, found 101 of these patients with various types of urologic lesions. Parenchymal renal disease was found in only 26 cases; the remaining patients had either obstructive or inflammatory lesions of the urinary tract. Hypertrophy of the prostate, chronic pyelonephritis and renal stones and their complications accounted for the majority of the cases. Clinically, the relationship of prostatic obstruction and elevation of the blood pressure has been recognized for many years. O'Conor[7] in 1928 noted a fall of abnormally high blood pressure in 74 patients with urinary obstruction following the institution of adequate bladder drainage.

In 1923 Quinby[8] reported a case of unilateral renal disease in which the associated hypertension was relieved by nephrectomy. In recent years many such cases have been reported. Leadbetter and Barkland[9] reported a case of hypertension in a boy, aged 5½ years, relieved by removing a congenitally misplaced kidney. The lumen of the renal artery was partly occluded by a plug of muscle tissue, apparently a congenital anomaly. The renal tissue was essentially normal. Crabtree[10] collected five cases of unilateral destructive renal lesions with hypertension in which the patient improved after nephrectomy, and reported one of his own. The pathological lesions consisted of pyelonephritis with some degree of hydronephrosis. One patient known to have nephritic changes in the opposite kidney had a return of hypertension within a year and died following an operation for intestinal obstruction; another had a return of hypertension ten years after nephrectomy. The remaining four patients were well 2 to 22 months after nephrectomy.

Nesbit and Ratliff[11] reported twelve cases of advanced unilateral inflammatory disease of the kidney, nine of which were accompanied by hypertension. One of these patients presented symptoms of cardiac decompensation and died of pneumonia. Autopsy showed pyohydronephrotic atrophy, fibrosis and vascular thickening of the left kidney, with hypertrophy and dilatation of the ventricles of the heart. Nephrectomy was done in ten cases. Of the seven who also had hypertension, five were relieved of hypertension by nephrectomy. The two in which hypertension was not relieved by nephrectomy had previously suffered toxemia of pregnancy and afterwards hypertension had developed. Nesbit and Ratliff also reported two cases of hydronephrosis accompanied by hypertension. In one case the blood pressure was reduced by bilateral nephrostomy and in the other by nephrectomy.

Parker and Walters[12] reported five cases of unilateral chronic atrophic pyelonephritis associated with hypertension in which the blood pressure returned to normal after nephrectomy. Reviewing 24 case histories of patients previously operated upon for chronic atrophic pyelonephritis they found that eleven showed definite hypertension.

Braasch, Waltman and Hammer[13] found in a study of 1,684 patients subjected to renal surgical procedures at the Mayo Clinic that hypertension occurred most frequently in association with chronic renal infection which caused extensive atrophy of the renal tissue and sclerosis of the blood vessels. A study of 198 cases in which hypertension accompanied renal disease showed that the blood pressure became normal following operation upon the kidney in one-third of the cases. In those cases in which hypertension accompanied atrophic pyelonephritis 70 per cent were relieved by nephrectomy.

Other cases of unilateral renal disease associated with hypertension and relieved by nephrectomy have been reported by Butler,[14] Boyd and Lewis,[15] and D. W. McIntire.[16] In these cases partial occlusion of the renal arteries or sclerosis and thickening of the renal arterioles were noted in the specimens removed.

McCann and Romansky[17] observed a group of patients with hypertension and renal ptosis. They found in these cases that there was an appreciable diminution of the blood pressure, in some cases to a normal level when the patient was kept in bed.

They also found that the renal blood flow was greater in the recumbent position than when the patient assumed the erect posture. In their cases, although nephropexy did not relieve the hypertension, critical exacerbations of blood pressure with attendant ocular and cardiac symptoms seem to have been prevented.

I have recently operated upon and now have under observation three patients in whom renal pathology was associated with hypertension. In two of these cases nephrectomy was done, and in the third a movable kidney was suspended. In all of these there has been definite clinical improvement, and in two the blood pressure has returned to normal.

CASE REPORTS

Case No. I.—I. G., white female, age nine years, was considered to be in good health until December 25, 1938, when she complained of headache and had a convulsion. During the next 48 hours she had six convulsions. She was admitted to the Hospital Division of the Medical College of Virginia, December 28, 1938, in a comatose condition, with temperature 105°F., right arm and leg flaccid, and some stiffness of the neck. There was moderate leucocytosis. The w.b.c. count was 12,500, and the urine contained 50 to 60 pus cells per high power field. Two days later her blood pressure was 180/140. Lumbar puncture was done, showing pressure of spinal fluid 320 mm. of water. The child's vision was definitely impaired. X-ray examination of the urinary tract January 12, 1939, was negative for stone. Intravenous urogram showed that the left kidney was only about half the size of the right. Both kidney pelves filled well in eight minutes. There was no evidence of obstruction. A definite diagnosis was not made. Nephritis, encephalitis and tumor of the brain were all considered. The child gradually improved, regaining consciousness, the temperature gradually subsided, and partial paralysis of the right side of the body cleared up. She was discharged from the hospital January 29, 1939, in fair condition. There was some blurring of the vision and the blood pressure was 145/95. After remaining home for three days she began to vomit and to complain of headache. She was again admitted to the hospital February 2, 1939. Her physical condition was unchanged; blood pressure varied from 150/100 to 220/180 at different readings. An encephalogram showed evidence of slight hydrocephalus, but no evidence of tumor. She was discharged February 26, 1939, with a diagnosis of essential hypertension. In the discharge note the resident suggested that the left kidney was possibly a cause of the hypertension.

The patient was in fair health with the exception of gradually failing vision until July 17, 1939, when she had a convulsion and was again admitted to the hospital. Her blood pressure on admission was 170/110 and two days later was 240/170. Examination of eye grounds showed moderate edema of both optic discs. The blood count was normal; the urine contained a trace of albumin and a few pus cells. Both ureters were catheterized and pus cells and a culture of Bacillus dysentericus (Flexner) were obtained from both kidneys. B. coli were also cultured from the right kidney. Sixteen per cent of phenolsulphonephthalein was obtained from the right kidney in fifteen minutes and three per cent from the left kidney. Approximately the same amount of urine was obtained from each kidney. An intravenous urogram was made with essentially the same findings reported six months previously.

On July 24th a left nephrectomy was done. At that time her blood pressure was 205/150. Twenty-four hours following nephrectomy the blood pressure began to decline and continued to decline until she was discharged from the hospital on September 16th, 54 days following the nephrectomy. The kidney measured 7 x 4 x 2 cm. There was moderate dilatation of the pelvis, with thickening of the mucosa. Microscopic examination showed atrophy and dilatation of most of the tubules and marked increase of the fibrous stroma with infiltration of large patches of round cells. The vessels, particularly in the medullary portions, showed marked sclerosis and some proliferative endarteritis and occasional necrotizing arteriolitis. The pathological diagnosis was ascending pyelonephritis with marked scarring, diffuse tubular dilatation of intervening tissue, and severe sclerosis with foci of arteriosclerosis in the involved vessels.

On November 8th, about two months after her discharge from the hospital, the child seemed very much improved and her vision had returned almost to normal. The urinalysis was negative except for three to four pus cells per high power field, and the blood pressure was 158/120. Examination four months later showed her in good health, blood pressure 170/120. At the present time, almost two years

since the left nephrectomy was done, the patient is well and active. Her vision has improved to the extent that she attends school regularly and reads any type with ease. Her blood pressure ranges around 170/120. (Chart 1). She has had pyelonephritis of her remaining kidney and was only temporarily relieved of hypertension. She has not had the severe exacerbations, such as high blood pressure, headache, nausea, and blurring of vision since removal of the left kidney. She takes part in all of the activities of a child of her age.

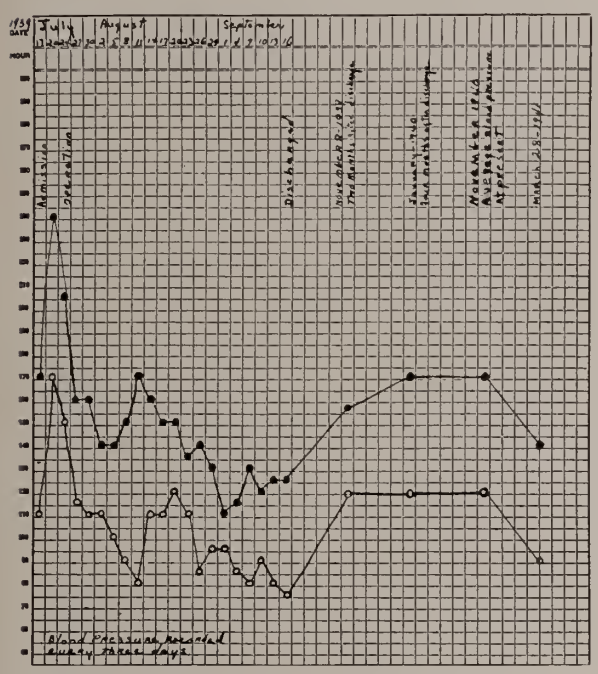

Chart 1. I. G.

Case No. II.—Miss E. B. was admitted to St. Elizabeth's Hospital May 28, 1936, because of severe pain in the left flank, nausea and vomiting. The blood count was normal and the urine contained only a few pus cells. The physical examination was negative with the exception of tenderness below the left costovertebral area. The blood pressure was 130/80. On cystoscopic examination obstruction was met at the left uretero-pelvic area of the ureter, believed to be a non-opaque stone, since there was no evidence of stone on x-ray examination. The nausea and pain persisted, and her temperature and pulse rate became elevated. Two days following admission a nephrostomy was done for drainage. No stone could be found; the left kidney and ureter were edematous and many minute pustules dotted the surface of the kidney. The patient made a satisfactory recovery and left the hospital one month following admission.

She was in good health with the exception of sinus infection until October 28, 1937, when she had a chill and severe pain in the left kidney area. Until her admission to the hospital two days later she had two other chills and required several hypodermics for the relief of pain.

On this admission to the hospital she complained of acute pain in the left flank. There was tenderness below the left costovertebral angle and some abdominal distention. The blood pressure was 140/90. Blood count was normal. The urine contained numerous pus cells. A catheter was passed to the left kidney pelvis without difficulty. There was no residual urine in the kidney pelvis, but the specimen collected was very cloudy. The catheter was left in place for about twelve hours for drainage.

Following this attack of pyelitis she was never entirely free of pain in the left kidney area, and the urine was rarely free of pus. She complained of frequent headaches which were attributed to sinus infection, and her physician noted that her blood pressure which had previously been normal was persistently elevated, averaging between 170 and 180 systolic.

On June 19, 1939, she was again admitted to the hospital, stating that it was necessary for her to be rid of the pain or she could not continue her occupation as a teacher. An intravenous pyelogram showed nothing of significance. The function of both kidneys from concentration of the contrast substance was satisfactory. Phenolsulphonephthalein test showed an output of 28, 16, 9 and 3 at half-hour intervals. The blood pressure was 160/100. Since her pain had not been relieved by palliative measures, and it was felt that the increase in blood pressure was probably caused by unilateral kidney pathology, the left kidney was removed. The pathological diagnosis was diffuse chronic nephritis with arteriosclerosis. She made a prompt recovery from the operation and was discharged from the hospital 15 days after the operation. On discharge her blood pressure was 130/70.

In the first three months after she left the hospital her pressure varied from 130 to 140 systolic. For the next three months it again rose to 160 to 170 systolic. Since then, from January, 1940, to the

present time, it has varied from 122 to 150 systolic; the last reading, on November 5, 1940, was 145/80. (Chart 2).

This case is of particular interest, since the patient has been followed from the onset of her infection. At the first operation the kidney was acutely and severely infected. There was a gradual increase in blood pressure beginning about a year following the onset of infection. Since nephrectomy was done there has

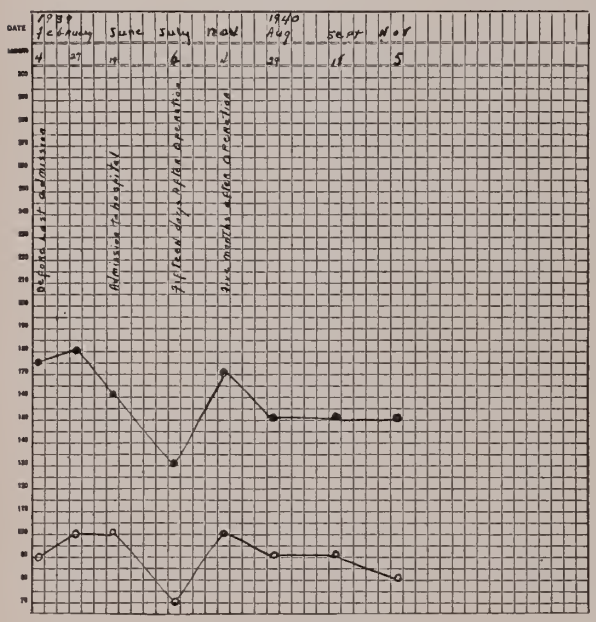

Chart 2. Miss E. B.

been general improvement in her health. Though the sinus infection persists, the headaches are much less severe and the blood pressure average for the past twelve months has been twenty points below the average of the twelve months prior to nephrectomy.

Case No. III.—Mrs. L. S. was admitted to the Hospital Division of the Medical College of Virginia June 21, 1937, because of pain in the right lumbar region and right lower quadrant of the abdomen. The physical examination was negative. The blood pressure was 90/60. The laboratory examinations were negative with the exception of a few pus cells in the urine. X-ray examination of the urinary tract was negative for stone, but there was ptosis of the right kidney and slight dilatation of the kidney pelvis with clubbing of the upper calyx. The patient returned home relieved, June 25, 1937.

When again admitted to the hospital October 5, 1937, she complained of pain in the right flank, hematuria, nausea and vomiting. No blood was noted in the urine on admission, and the vomiting was thought to have been caused by opiates given for relief of pain. On physical examination there was some tenderness over the right costovertebral area. The blood count was normal, and the urine contained 40 to 50 pus cells per high power field. Phenolsulphonephthalein test showed an output of 60, 12 and 5 for three half-hour periods An intravenous pyelogram showed an excellent concentration of the contrast substance in both kidney pelves within five minutes. The right kidney pelvis was larger than the left, but emptied more promptly. Ptosis of the right kidney was noted. On October 11, 1937, the right ureter was dilated with a No. 12 French bulb. There was considerable increase in pain for a few days following this treatment but the pain gradually subsided and the patient was reasonably comfortable when she left the hospital October 20th. Urinalysis at discharge showed ten pus cells per high power field.

She was re-admitted to the hospital May 11, 1939, because of pain in the right flank and right side of the abdomen. There was tenderness below the right costovertebral angle and to the right of the umbilicus. The blood count and urinalysis were normal. The blood pressure was not recorded. Since her previous admission in October, 1937, she had had a perineorrhaphy and radium-induced menopause at another hospital. In the interval her physician had treated her with calcium and sedatives for a number of kidney colic attacks.

The ureteral catheter was passed to the right kidney pelvis and left in place for drainage. After forty-eight hours she was comfortable and the catheter was removed. She left the hospital May 20, 1939, and seemed somewhat improved.

On August 5, 1940, she was again admitted to the hospital with a history of almost constant pain in the right kidney for the past year and severe headache for a period of six weeks. There was tenderness below the right costovertebral angle and over the right upper quadrant of the abdomen. Her blood pressure was 170/120; blood count and urinalysis were normal. X-ray examination of the urinary tract was negative for stone. Intravenous urogram confirmed the previous diagnosis of ptosis of the right kidney with an early hydronephrotic change. After seven days' rest in bed, her blood pressure dropped to 145/95, and her headache was much less severe.

A nephropexy was done on August 13, 1940. Following this her blood pressure continued to decline until at the end of two weeks it was 115/80. From that time there was a slight increase in blood pressure, and on discharge from the hospital September 4th, it was 140/90. Since she returned home, she has had very little renal pain and no headache. Her blood pressure has averaged 130/90. (Chart 3).

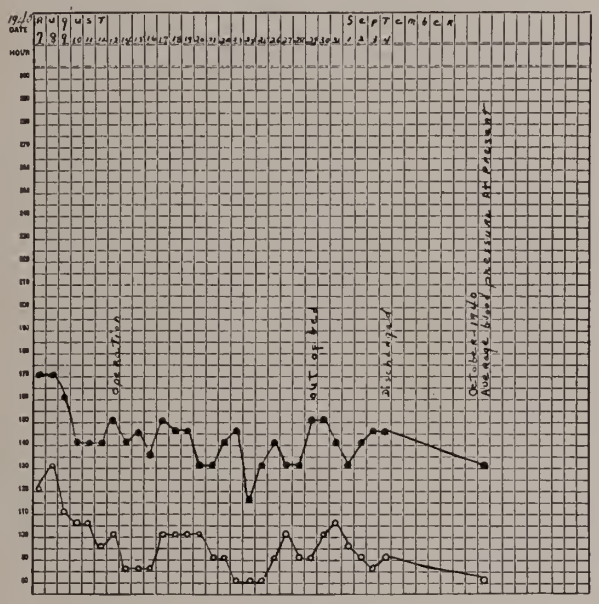

Chart 3. L. S.

Elevation of the blood pressure in this case apparently resulted from nephroptosis described as orthostatic hypertension by McCann and Romansky. Elevation of the blood pressure occurred within a few months prior to operation and has subsided following nephropexy.

CONCLUSION

I. There is sufficient evidence to recognize obstructive lesions and chronic infection of the kidneys as potential causes of elevated blood pressure. Special care in correcting these conditions in their incipiency should aid in reducing the incidence of hypertension.

II. The possibility of surgical disease of the urinary tract should be considered in patients suffering from hypertension.

NOTE: This paper was prepared in 1940 and publication has been delayed so that I might observe these three patients a little longer.

Case No. 1 has shown constant improvement. She was admitted to the hospital on May 28, 1941, because of pyelitis of the remaining kidney. At that time her blood pressure was 140/90.

Case No. 2 has continued well and her blood pressure has remained at a normal level.

Case No. 3 has had a recurrence of her hypertension together with some attacks of headache.

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Professional Building.

OUR DUTY AS PHYSICIANS IN THE PRESENT EMERGENCY—FROM A PATRIOTIC STANDPOINT*

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I am not unmindful of the fact that you bestowed upon me a distinct honor, when you elected me President of your Society, and I am profoundly grateful and appreciative of this recognition.

In war time every person in whose make-up there is a spark of patriotism wishes to do something heroic. In the present conflict the disloyal person is a rarity almost outside of our vision. Everyone wishes that his duties call for some performance which will make him an acclaimed hero. There will be many of our citizens who will have that opportunity. For most of us, however, duty will be a prosaic, as well as a stern, task-master; each person can do something useful and helpful. We need not travel to fields afar to perform services which will help win the war.

Public health work or preventive medicine has made much progress in recent years, due in part to an awakening of the public to the advantages gained. Its foundation may well be based on a clause in the preamble to our Constitution, "to promote the general welfare".

It is good to know that one has a country worth defending. Ours is a nation worthy of defense, because of its heritage. Even if some of us cannot claim that our forbears found a toe-hold upon the crowded deck of the Mayflower, all of us are heirs to those men and women who sailed to found on the barren shores of New England their new world.

Our nation is worth defending because it evermore enriches the chance of God's plain people. Some of you may have lived in a country where there is no middle class, where one lives in the presence of lavish wealth, or in the presence of poverty, bitter and cruel. One of the joys of the traveler in America is the sight of the increasing number of small houses, small and lovely houses, the homes of a great "middle class", so called, where fathers and mothers and little children can live in decency.

Our nation is worth defending because it bears the hopes of all the little peoples of the world, the peoples defrauded, beaten down, destroyed.

No nation can profess strength whose people are physically unfit for efficient service. Consequently, any intelligent defense effort must give first attention to the health status of both its civilian and military populations. The present conflict is no ordinary war. The total capacity to produce and total efficiency are the primary issues involved in this mighty military effort, and it goes without saying that the efforts of the nation possessing these qualities in greatest abundance will ultimately triumph. This means that the health and efficiency of the industrial worker and of all civilians whose responsibility is to produce modern military equipment are equally as important as the health and efficiency of those who carry the rifles, pilot the planes, or drive the tanks. In the light of all this, public health assumes a role of importance second to none in developing military strength. And military strength, we must not forget, depends upon civilian strength and morale. If ever we needed to put to work fully those fundamentals of public health which will promote and conserve the health of our 131,000,000 citizens, we need to do it now.

Total defense presents tremendous problems which we can hope to solve only through intelligent cooperation, careful planning, and a willingness to sacrifice. The whole job is one of teamwork and means sharing the responsibility for the common good.

We know from long experience that mobilization of troops increases the incidence of communicable diseases. Therefore, precautionary measures are being taken and programs are being developed which will reduce preventable illnesses and disabilities. Experiences gained during the previous World War will help us to cope with the present emergency more efficiently and to avoid many mistakes. In fact, ironic as it may seem, tremendous impetus was given both medical and public health advances during the first war which tend to offset or compensate in some measure for the great loss of life and destruction of property. This seems to bear out a statement once made by the illustrious Dr. Charles Mayo, that "When the institutions, the freedom, the wealth, the health, and the very lives of a people

*Address of the President delivered before the Southwestern Virginia Medical Society, at Radford, September 23, 1942.

are jeopardized by destructive forces from without, the primal instinct of self preservation becomes a spur to endeavor and accomplishment"—and war, tragic as it is, seems to leave some good in its wake.

We are reminded that the 1914-1918 war introduced a new era in preventive medicine, public health and sanitation and that many of the most effective public health procedures of today evolved from this period. For instance, trench fever, which had handicapped the British Expeditionary Force, was brought under control as a result of advanced sanitary knowledge which makes it possible to inhibit its development and prevent its spread. The efficacy of immunization procedures such as typhoid vaccine and tetanus antitoxin to prevent typhoid fever and tetanus was definitely established. Botulism was discovered to be caused not only by contaminated meats but by improperly canned vegetables which had become infected. There was acquired increased knowledge regarding the dangers of over-crowding and the importance of isolating patients and segregating contacts exposed to meningitis, influenza, and other infectious diseases.

Among the outstanding contributions to preventive medicine was the Army's candid system of venereal disease control, which helped to inhibit the spread of these disabling afflictions among the troops. Today, civilian populations are approaching the problem somewhat as did Rip Van Winkle—after a twenty year period of indifference. People, at last, have awakened to the fact that syphilis is a disease problem, not a disgrace, and that it can be cured by patient treatment. Enlightened public opinion now encourages educational and other practical control measures.

No small development arising out of the 1914-1918 war was the new interest in child welfare and in periodic physical examinations. This was doubtless due to the realization that many of the physical defects disclosed by military examining boards might have been prevented by intelligent care and training during the early years of life. These and many other advances were realized, making it possible for both medicine and public health to achieve new heights in administering to the health needs of the country in the years which followed.

The World War I doctors, trained in sanitation, returned to civil life, and demobilized soldiers returned to their peaceful pursuits with the marked effects of sanitary control measures impressed on their minds. These were obviously powerful factors influencing the future progress of preventive medicine. The war has fostered propagation of general knowledge concerning sanitation and especially the importance of sputum, excreta, flies, lice, and other vermin in the spread of disease. The negligence in former years, with respect to hygiene, and the needs of the future were brought to light by the first World War, and now the second finds the medical world well prepared to move into the role of camp doctor and nurse.

The campaign of the American Typhus Fever Commission in poverty stricken Serbia in 1919 is a striking example of how the public was educated in preventive medical measures. The terrible epidemics of deadly typhus fever spread in Serbia, Poland, and Russia as an aftermath of the war largely because of the filth, squalor, and chaos left in the wake of the great conflict. The United States Government was inspired to send scientific aid and practical relief into Serbia and Poland. A well organized Typhus Fever Commission went to Serbia and was given dictatorial powers by the helpless government. The success of this American Commission was due largely to a magnificent educational program which it carried to a successful completion, dispelling the superstitions and fatalistic philosophies which had prevailed in that country.

Submarine warfare focused medical attention on the problem of ventilation and the dangers of carbon monoxide and lack of oxygen. This not only aroused educational programs to prevent these hazards wherever they might occur, but also led eventually to successful developments in air-conditioning. Likewise, the modern rat-proofing of ships, docks, warehouses, and other buildings was promulgated by sanitary studies and experience gained largely from the World War.

I have cited these examples of medical progress in the first World War to show that the medical profession was caught napping at the outset. They were far behind the magnitude of the great war in both methods and equipment. They did not understand *what* war would bring that peacetime does not. That is not the case in the present conflict. They were not ready, and it was not until after the close of the war that many life-saving discoveries were made. We are ready and we are already saving lives in methods advanced over those of our enemies. As one example I mention blood plasma and blood banking.

I should like to discuss with you for a few min-

utes the duty of doctors in the present emergency. First of all, the army and navy need surgeons by the hundreds to keep up with the ever-increasing incoming troops. So, I say, if you're young enough, get in now.

As one meets and talks with doctors, he is impressed with the burden that is being placed on the shoulders of the doctors who have *not* gone into the military services. Everywhere it is found that as the younger men have gone into the army or navy, the older doctors have been taking on additional responsibility and additional work of all kinds. The doctor in civilian practice will have responsibilities thrown upon his shoulders, not only for the care of the sick civilian population in greater numbers than ever before, but also he will have the care of the indigent, leadership in civilian defense and the maintaining of health standards in his community. A further burden he will be asked to carry if it becomes organized and functioning, will be the rehabilitation of the men who were turned down by the Selective Service on account of physical defects which are remediable. He will have to play an important role in rehabilitating these individuals.

It is very gratifying, indeed, to observe how willing and anxious doctors under the age of forty-five are to volunteer and to get into active service. Almost to a man they seem desirous of going, and when their applications for active duty are not acted upon quickly enough, they seem to resent their being held back. All credit should go to these younger doctors for their desire to serve their country. It will be that their income, in most cases, will be materially reduced and many of them are fearful that on their return to civil life their practices will be gone. This, however, was not the experience in the last war. Also, these men are going with a good and brave heart. Service in the Army does not imply freedom from danger and even death. The Medical Corps in the last war suffered a very large number of casualties, larger than any other special service, so that the younger doctor with combat troops going forth to war, risks injuries which may be even fatal. However, as with all young men who are going into the Army, they are accepting this contingency with the thought that if anything does happen to them they are doing it to preserve a way of living which entitles them, their families, and all Americans to freedom of thought and action.

While there is generally a considerable cut in income when a doctor enters the armed forces, he is by no means deprived of good support for his family, and his rank is one of respect and dignity. The doctors nearing middle age are, of course, eligible for higher commissions than the younger men, but advancement comes fast, especially in the Army. With Naval appointment come greater responsibility and slower advancement.

In the smaller communities the doctor is the civilian defense leader, and should be, for he is among the best educated men of the vicinity, and his experience in dealing with people generally fits him for a good leader of the civilian population and a public figure in time of emergency.

I urge you as medical men to seek the responsibilities in your community that best suit your ability. It is bound to mean a sacrifice in time, and probably in financial return, but it is our duty as physicians to exercise our unique abilities for the good of our fellow men, especially in a time of national emergency.

I am convinced that when this war is over, and having been weighed in the balance, will *not* have the time of readjustment is at hand, our profession, been found wanting.

THE CARE OF THE MENTALLY ILL IN A GENERAL HOSPITAL*

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The purpose of this paper is to present the problem of caring for the mentally ill in a general hospital. I will attempt to review the problem from an historical standpoint, as well as relate to you statistics and discuss reasons why individuals as well as the hospital, the community and the State will profit by the inclusion of such a unit in its organization. Some of the material herewith contained was taken from a most comprehensive monograph—"The Care of the Psychiatric Patient in General

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

Hospitals" by Franklin G. Ebaugh, of Colorado.

The care of the mentally sick in a general[1] hospital dates back to 1755 when the Pennsylvania Hospital in Philadelphia was established. In this hospital there was a department for "cure and treatment of lunaticks". Until very recent years, however, few general hospitals have established separate departments for the handling of psychiatric problems arising in that hospital and in the community. Virginia at present has two hospitals offering this service—one at the University of Virginia and the other at the Medical College of Virginia in Richmond. In 1908 the New York Hospital made provision for psychiatric patients by including a separate department and building in its facilities and since 1932 it has been rendering extensive service through the Payne-Whitney Clinic of the New York Hospital. Bellevue Hospital in New York City and the Albany Hospital in Albany, N. Y., the Henry Ford Hospital in Detroit, the Strong Memorial and Municipal Hospital in Rochester, the Massachusetts General Hospital in Boston, the Cincinnati General Hospital, the Los Angeles County Hospital, the Cook County Hospital, the John Sealy Hospital at Galveston, the psychiatric unit at the University of Colorado, and the two psychiatric units in Virginia are notable examples of the march of progress in the field of psychiatric service in general hospitals.

A factor which has thwarted somewhat the development of psychiatry in general and the care of mental patients in a general hospital is the attitude and concept of the average doctor and most laymen to the subject. When a mental case is mentioned, they think immediately of an individual who is maniacal, crazy, or insane—someone who is combative, destructive and noisy. The erroneous belief that a mental diagnosis attaches stigma to the patient and to his family is a barrier which can be overcome only by education. Recently, I heard a prominent physician, in discussing the psychogenesis of illness, say: "That's monkey business."

Psychiatry is intimately concerned in every disturbance to which the human body is heir, whether it be anatomical, physiological or psychobiological. We must determine, if possible, not only how a person behaves, but, if possible, why,—whether the condition be largely an organic reaction type of psychiatric disorder, or whether the condition is a psychobiological one. A complete study of the soma as well as the psyche is carried out by competent psychiatrists. A good psychiatrist must be a relatively good physician,—certainly he should be able to recognize physical disorders and call in the proper consultant. Not infrequently, the internist and surgeon devote too much attention to the organic factor of disease and neglect that phase of the condition which deals with the individual as a whole. In other words, the total personality is frequently not given adequate attention. On the other hand, many psychiatrists pay too little attention to the organic component of mental disorder. Psychiatry must be looked upon as a fundamental of general medical practice. In the Medical College of Virginia, both in the College and Hospital Departments, neuropsychiatry has been made one of the five major subjects and now ranks in importance with medicine, surgery, pediatrics, and obstetrics. Many patients admitted with a physical diagnosis in general hospitals are not known to be psychiatric patients at the time of admission, and in many hospitals they would be refused admission if their true condition was recognized.

Heldt has found that from 12 to 20 per cent of all patients admitted to a general hospital will be found to present conditions and problems that are primarily neuropsychiatric regardless of the patient's complaint or of the diagnostic impression when first examined. If mention be made as well of all cases showing secondary and minor disturbances of the nervous organization, then the percentage promptly rises to 30 per cent, and even higher. No less of an authority than Louis Hammon, that internist of renown, said that no physical basis could be found for the complaints of 60 per cent of his patients. Strecker estimates that 75 per cent of patients consulting the general practitioner consist of (1) neuroses, (2) organic disturbance complicated by neurotic conditions, (3) psychopathological complications of chronic organic disease, (4) the mental aspects of convalescence, and (5) partial or complete psychopathological problems in children. We must conclude that you have a psychiatric problem in your hospital whether you desire it or not. Unfortunately many of these conditions are treated without any consideration for the psychiatric issues.

Hamilton in 1939 was able to list 37 general hospitals with psychiatric facilities, with an additional six Veterans Administration Hospitals.

It is important to educate the administrative, medical, nursing, clerical and other personnel of the

hospital concerning their attitude toward the department of psychiatry. Many of them refer to it as the "nut department", "crazy floor", etc., and do not discriminate to whom they pass such remarks. Whereas, it will probably be a long time before this practice and attitude will be discontinued entirely, it should be discouraged, and everyone should be informed as to the real worth of the department. This attitude very likely will change, in time, as it has in general hospitals with such departments long established. Nurses and medical men, as well, often discuss the question of stigma which is attached in the minds of many to any type of mental illness. It should be remembered that the treatment of mental disorder is on a rational basis, such as is any medical or surgical illness. It is this very stigma that has been an important factor in permitting the neglect of so many cases if allowed to become chronic, and it should be impressed upon all who have anything to do with mental sickness that a mental disorder is just as truly an illness as is appendicitis or pneumonia.

A frequent objection to the psychiatric patient is that they are noisy. I dare say that there is less noise in the average well ordered psychiatric unit in a general hospital than there is in the medical or surgical ward. Occasionally over-active, maniacal, or delirious patients will be disturbing for a time, but, more often, they are quieted within a few hours—and usually without the use of drugs. If sedation and relaxation cannot be accomplished in a reasonable length of time the patient should be transferred to a strictly mental institution whose facilities for taking care of such patients are more adequate.

A question frequently raised is—"in what way are we able to hold a mental patient against his will?" With a few exceptions, all of our patients have been voluntary. Some of them object to the so-called confinement and the necessity of the occasional locking of a door, but most of them are soon contented and cooperative in their treatment, and are well pleased with their surroundings. Occasionally a disgruntled patient will demand his release—which is always given when reliable persons assume the responsibility for them. Not infrequently a patient will have to be literally made to go home.

A mental patient may be legally committed to a psychiatric ward of a general hospital where he may be observed and treated for a limited time, but we do not encourage this procedure. The psychiatric ward of a general hospital may be utilized for the observation and diagnosis of a suspected mental malady, thereby preventing the patient from being subjected to the incarceration in a jail hospital or to be committed to a mental institution without sufficient observation. By this procedure legal commitment may be made necessary.

The value of a psychiatric unit in a general hospital to medical and nursing students is considerable. Henry has expressed the opinion that no medical student should be graduated without having taken a course in the psychiatric aspects of general hospital practice. Harrison Ford emphasized that psychiatry should be taught not because of the small percentage of the physician's patients who will be psychotic, but because 30 to 65 per cent of the symptoms presented by his patient will require understanding in this field. When a hospital accepts an interne it assumes a definite duty as to the education of that individual which it cannot properly discharge unless it provides them with an opportunity to understand and treat many of the psychiatric problems. It has been my observation that the interest of the student nurse, the medical student, as well as the interne, has been materially increased in psychiatry since we have had adequate teaching material in a department properly operated for instruction in this subject. At present, many of our internes are eager to work on this service, and the students almost without exception are showing a remarkable interest in the subject. This was certainly not true until a psychiatric unit was established in our teaching hospital. On the other hand, psychiatry has profited considerably by being included in the activities of the general hospital. Also, it has become clear to many of the skeptical in other branches of medicine that they and their patients can profit by the early recognition and treatment of psychiatric disorders. It can be demonstrated that psychiatry is not the sterile subject that it once was, and as many in the other specialties of medicine still believe it to be. Modern therapeutic methods, such as malarial and shock therapy, as well as sedation of patients without drugs have proven their worth.

A tremendous increase in chronic psychiatric cases has been recorded in recent years, and it is believed that had many of these not been neglected and had

had the opportunity of psychiatric care at an early stage of their illness, they would never have reached the stage of chronicity. It has been often said that there are more individuals occupying beds in mental hospitals today than there are sick persons in hospitals for every other reason, including tuberculosis. It has also been said, statistically, that insanity has been increasing for the past fifty years about three hundred times faster than the population, but these statistics are not so alarming when they are correctly analyzed and properly interpreted. The increase in insanity is due to a number of facts, as (1) diagnosis of mental and nervous diseases is more critical and discriminating; people are being called insane today who formerly had some other diagnosis; people who were formerly regarded as queer are now definitely diagnosed as being psychotic; (2) It is easier to count those who are mentally sick today, for the reason that there is a greater tendency to place the milder types of psychoses in institutions than there formerly was; (3) the life span of an individual has greatly increased in the last fifty years; more people now live to reach the age when certain types of mental breakdowns occur. There has been an increase in the urban population, and it is an accepted fact that neurotic individuals break down more frequently under the pressure of urban life than when living in the quiet countryside. Something more must be done than has been if we are to reduce the frequency and duration of mental illness. Why will not a psychiatric unit in the general hospital help accomplish this end?

There is a need for the development of psychiatric units in general hospitals in every city of over 50,000 population. What justification is there for the name "general hospital" unless it receives patients suffering with every type of malady? I trust that I will be able to show that the hospital as well as the patient will profit if all large general hospitals will care for the mentally sick as well as the physically sick.

I would like to tell you something of the operation of the psychiatric unit in the Medical College of Virginia Hospital. The new hospital in our medical center, known as the Medical College of Virginia Hospital, was opened for white patients in the late winter or early spring of 1941. Because we were unable to procure a sufficient number of properly trained psychiatric nurses and attendants at that time, we were unable to open this department until July 1, 1941. At this time the women's division received its first patients, and in September of that year the men's pavilion was opened. The hospital, built in the shape of a cross, is ideally situated for the segregation of psychiatric patients. In one wing, there are three rooms of four beds each, a large hall, nurses' office, and examining room, as well as a large day room for women patients. In another wing there is a similar arrangement for men patients. In another wing, there are ten private rooms, most of which have private baths for patients desiring this type of accommodation, and in the other wing there are rooms for disturbed patients, the men and women being well separated, and there are four tubs for continuous flow baths, all of which are automatically controlled.

Our staff consists of the head of the department, an assistant who devotes his entire time to the patients, to the teaching of students, and to research, and as chief of the clinic in the out-patient department for ambulatory neurological and psychiatric patients. There are a half dozen visiting psychiatrists who are relatively active in the wards and in the out-patient department. These physicians have the privilege of treating patients in the several pavilions in the hospital. Our organization calls for a resident who has had experience in psychiatry, an assistant resident, a senior and first year interne who rotate among the services in the hospital. We have a psychiatric supervisor of nurses, a head nurse in each pavilion, and trained psychiatric nurses in each pavilion. The number of maids and orderlies are maintained according to the usual standards. It so happens that, at present, our nursing and medical staff is under-manned because many of them have been called into the service, and others have gone into more lucrative fields. All of our graduate nurses have had psychiatric training, and a certain number of student nurses in the hospital are given this training for a time during their course. There is no provision made for a psychiatric unit for colored patients at this time, but the use of the Dooley Hospital, one of the buildings in the medical center, is contemplated for the care of these patients.

Due to our limited number of beds and to the fact that our hospital is a teaching one, it has been our policy to accept only the relatively acute psychoneurotic and psychotic disturbances, and particularly those whom we feel will be benefited by a rela-

tively short stay in the hospital. Almost without exception, we refuse admission to chronic deteriorated mental cases. Occasionally a mental illness of long standing will be accepted for a limited length of time so that the patient may be committed to an institution or if the family or physician desire, the patient may be accepted for complete study so that the family may be satisfied that the patient very probably has an incurable malady or one which will be long standing. Disturbed patients are occasionally accepted, but because of our limited accommodations for this type of patient, we are careful in their selection. You will see, therefore, that the majority of our patients are the more profound of the psychoneurotic, and the milder of the psychotic cases. We attempt to distribute the type of case so that the student will get experience with a wide variety of cases.

Every patient is thoroughly studied from the physical, neurologic, psychiatric, psychological, sociological, and laboratory standpoint. Staff conferences are held regularly by the medical staff with students, social workers, psychologists, and certain nurses.

The equipment of the department is complete. It consists of, in part, fever therapy, hydrotherapy, physiotherapy, occupational and recreational therapy, as well as electro-shock and electro-encephalographic equipment.

The psychiatric department occupies the entire seventh floor of the hospital. Very soon we will move our out-patient department for ambulatory psychiatric and neurologic patients to the seventh floor of the Clinic Building, which abuts the hospital building. The occupational and recreational departments will likewise be housed in the Clinic Building on this same floor. We will then have the whole department on contiguous floors of these abutting buildings.

It is our policy to give practically no drugs for sedation. Fewer sedative drugs are used, probably, in this department than in any other in the hospital. It is seldom that strong sedation is used to quiet even the most disturbed patient. Continuous warm baths, sedative packs and the various shock therapies will usually suffice.

There is no question about the fact that a general hospital staff is quite helpful to the department of psychiatry. Expert consultants in every phase of medicine and surgery are easily available and the task of eliminating certain physical disorders is therefore simpler. On the other hand, the number of requests for consultation by the department of psychiatry has gradually risen, and it is believed that the medical service has derived some benefit from having a department of psychiatry in the same hospital. Disturbed patients can be taken to that part of the psychiatric pavilion provided for the care and handling of such cases, and problems which are disturbing to the medical man or surgeon can often be easily handled with the proper supervision.

In conclusion, I would like to say that I feel that a psychiatric department should be a part of every large general hospital. It is surprising what good results are obtained in early cases and how many individuals are prevented from having to go to mental institutions for long periods of time on account of having had adequate treatment early in a psychiatric unit of a general hospital.

Professional Building.

REFERENCE

1. Published by American Hospital Association, 1940.

DISCUSSION

DR. J. ASA SHIELD, Richmond: Dr. Gayle has brought to us a very timely subject and certainly one that has been impressed upon us who have had the opportunity at the various induction stations to examine the men who are going into the Service. It has been rather surprising to see the number of people with nervous and mental disabilities coming into these induction stations to be inducted into the Army. The rejections have been very high. As we know—in Virginia—in some months and in some of the stations, the rejections have been as high as fifty per cent for all the various kinds of disabilities; and in one month, at the station in Richmond, the rejections for nervous and mental disabilities happened to be 34 per cent of all the men who came. That was very high—the average being around 20 per cent. So we have this problem, whether or not we are prepared to take care of it.

Some years ago, at the Medical College of Virginia, we went over the records of all the patients admitted to the medical ward. Of that group, we found, to be exact, 18.2 per cent with psychogenic disturbances but whose complaints caused them to be classified as medical and admitted to that ward. The psychiatric department at the hospital is certainly a much needed one. The advantage of this department is for both the patient and the doctor, because you have a personnel trained to understand these people, trained to help them, and trained to carry out the therapeutic regimen planned by the physician. The nurses and even the attendants understand these people, and they do not say things or do

things that upset them as sometimes happens to these individuals on the general hospital floor. So the patient is better by having the department, and it is easier on the doctor—and the important thing is that the patient gets well more quickly.

Dr. Gayle suggested that psychiatry had been considered a sterile subject years ago, and I think to a certain extent the criticism of psychiatry and its treatment years ago was justified. He spoke about the first psychiatric department having been established in Philadelphia in 1755. That has been a long time and there was little progress made, we might say, until the latter part of the last century. But certainly in recent years there have been very marked developments in treatment. For instance, in 1917 Wagner von Jauregg introduced fever as therapy for neurosyphilis. Then there was also developed, in Vienna, insulin treatment. Then the convulsive treatment was first developed in Budapest by Meduna, and more recently electric shock has been introduced. The evolution of psychotherapy has enabled the psychiatrist to reconstruct personalities and straighten out their difficulties in a much more effective manner with the recent understanding of psychobiology and our greater understanding of psychopathology. Thus it follows that the mental and physical care of the psychiatric patient has evolved rapidly along therapeutic lines.

These various therapeutic procedures are made available in specialized hospitals and in specialized wards in general hospitals where there is a staff trained to take care of the nervous patient.

In the Medical College of Virginia Hospital it is also a great adjunct in the teaching of students to have this department there.

I enjoyed Dr. Gayle's paper very much and want to thank him for bringing this subject before the Society.

DR. BEVERLEY R. TUCKER, Richmond: It is very hard, Mr. President, for one to discuss a paper with which one agrees. I have run, I suppose, the whole gamut of the prejudices that have arisen in the treatment of the mental and nervous case. Unfortunately, the word "psychiatry" has carried in the mind of the layman a kind of stigma, I think, and that has put us on the defensive. We are on the defensive this morning. I could show you many letters from doctors presenting patients, saying: "I know nothing about mental and nervous diseases and I do not want to know, and, therefore, I am sending you the case." That is not very complimentary either to the man to whom the case is sent nor to the man sending it. To take that attitude is very discouraging. Not long ago I had a patient, and a member of his family wrote me he was sorry for his relative to be in a nut house and to be insane, and he thought it was a disgrace and he did not understand why that should be inflicted upon him, and so forth; and also that people ought to control themselves and not get insane. My answer to him was very simple; I said: "Just judging from your thought processes and the kind of intelligence you show and your prejudices and the fact that insanity is in your family, I think there is something wrong with you, and you ought to get treatment."

The old attitude is, however, gradually changing. There is no more disgrace in being sick in your brain than in your stomach or your liver or your rectum. You are just simply sick. There is no reason why psychiatric cases should not be treated in the general hospital. We have a private hospital of our own, not because we wanted it. Nobody wants to run a small hotel or boarding house and practice medicine at the same time (and that is what I have been doing for a number of years), if he can get adequate accommodations in a general hospital. A great many hospitals now are giving somewhat adequate accommodations. This whole question is being cleared up, but I tell you it has been a hard fight against prejudices. We tried for a number of years to get a small ward established in the Memorial Hospital in Richmond—tried to get twelve beds. As Dr. Gayle pointed out, a man is a better practitioner of medicine—better in any line, whether he be an obstetrician or pediatrician or even a dermatologist or a proctologist—if he understands psychiatric conditions. Often the mental and nervous processes of these patients carry them into a state in which they appear to be much worse off than they are.

I wish to emphasize one other thing Dr. Gayle mentioned, and that is that some of these patients can be treated without sedatives. We have to treat nearly as many of these patients for the drugs the doctors have given them as for the disease itself. Often the drug bill is bigger than the doctor's bill. They are poisoned with opiates and sedatives, barbitals, even estrogenic substances, and vitamins.

I think Dr. Gayle has made a contribution toward the understanding of psychiatry which we ought to bear in mind.

DR. GAYLE, closing the discussion: I should like to thank Dr. Shield and Dr. Tucker for their discussion of the paper and I wish to stress the point that I made in my paper and which was emphasized by Dr. Tucker as to the use of sedative drugs. We probably give less sedative drugs than most any department of the hospital, and we are usually able to sedate even our most disturbed patients with continuous flow baths, packs and other hydrotherapeutic measures and modern shock therapy.

ROENTGEN THERAPY OF BRAIN AND SPINAL CORD TUMORS IN CHILDREN*

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During the past seven and one-half years, we have had the opportunity to administer roentgen therapy and observe the course of 136 cases with a diagnosis of tumor of the brain or spinal cord, at the Hospital of the Medical College of Virginia and the Neurosurgery Service of Dr. C. C. Coleman. Twelve years ago, with Tracy,[39] we reported favorably on the roentgen therapy of a small series of cerebellar medulloblastomas. In 1941, with Russell and Farley,[26] we reported the first 100 cases of this series. Listing those patients 18 years old and under as children, we found 78 adults and 58 children. The tabulation follows:

136 TUMORS—78 ADULTS, 58 CHILDREN

Medulloblastoma	6	13
Pontine Tumors	5	7
Craniopharyngeoma	1	7
Pineal—3rd ventricle	1	5
Ependymomas	3	2
Astrocytomas	5	1
Unclassified tumor	2	7
Astroblastomas	1	1
Glioblastoma mult.	8	1
Spongioblastoma bip.	0	1
Hemangiomas	8	1
Metastatic	3	1
Spinal cord tumors	13	9
Retinoblastomas	0	2
Sarcomas	5	0
Hemangioblastoma	3	0
Pituitary tumors	12	0
Meningeoma	2	0

The incidence of brain tumors in children with Bucy's figures[8] modified slightly for clarity showed approximately:

Astrocytoma, unilateral in cerebellum	20-25%
Medulloblastoma, midline in cerebellum	20%
Pontine Tumors	15-20%
Craniopharyngeomas	15%
Pineal and posterior 3rd ventricle	5%
Ependymomas, of 4th ventricle	7%

ASTROCYTOMA

The astrocytoma is a common tumor of the cerebellum in children, which is relatively benign and well circumscribed and can be removed by neurosurgery with a very low mortality rate. When completely removed it does not recur and the patient is permanently cured. Roentgen therapy is used only when the tumor is incompletely removed. Of six cases with incomplete removal only one was in a child, a white female aged six years, with a unilateral cerebellar astrocytoma. She was living and well and making good grades in school, 5 years and 8 months after operation and roentgen therapy.

Astrocytomas occur in the cerebrum as well as in the cerebellum, and occasionally are pontine. They are protoplasmic or fibrillary. At least six papers reviewed favored radiation in the protoplasmic group, but only one, that of Deery,[14] irradiated the fibrillary type. Deery found microscopic changes in two or three fibrillary astrocytomas following irradiation, which he attributed to the action of the roentgen rays.

The four patients we have traced were living, and we have not found evidence sufficient to cause us to refuse treatment when these tumors have been incompletely removed, although we are aware of the many statements in the literature against the use of irradiation in the fibrillary astrocytomas.

In the typical unilateral cerebellar tumor in a child the plain roentgenograms of the skull show the sutures separated, the sella turcica is enlarged and the clinoid processes are eroded, convolutional markings on the inner table of the skull are common, and the cerebellar fossa may become enlarged due to the bulging and thinning of the suboccipital region. Clinical signs of a predominantly unilateral cerebellar lesion are usual.

MEDULLOBLASTOMA

Of 19 verified medulloblastomas, 6 were in adults and 13 in children. All the children's cases were cerebellar. There were 10 males and 3 females, 11 white and 2 colored, aged 2 to 17 years.

One female is living and well five years following partial removal and 5 series of deep x-ray treatments, to four skull portals and two long spinal portals, one series in 1937, two in 1938 and two in 1941, using 200 K.V. in the first four, and 400 K.V. in the last series. A second operation in the

*From the Department of Radiology, Medical College of Virginia.

early part of 1942 revealed no evidence of tumor cells and the patient has entered college. Counting six portals, the skin received a total of 19,624 r and the air dose was 14,300 r. The tumor dose was certainly above 4,000 r but the intervals between treatments should be kept in mind, as they were too long.

Three of our patients lived over four years and then developed spinal cord metastases although all had careful irradiation of the entire cerebrospinal axis in an effort to prevent such occurrences. In one case in which the cerebellum received a tumor dose of 5,763 r no tumor cells were found in this region at necropsy, but the spinal cord, treated with a tumor dose of 4,261 r, showed living neoplastic cells. Here, again, the intervals between treatments were too long to have the total tumor dose mean anything.

In a review of the literature, fifteen authors were found who regarded these tumors as radiosensitive and only Davis and Weil[13] mentioned radioresistance. The overwhelming opinion favored radiation therapy as an adjunct in their treatment, with some difference of opinion as to whether biopsy only should be done or partial or complete extirpation should be attempted. We do not believe that roentgen therapy should be given until suboccipital decompression and biopsy have been completed.[39]

Pontine Tumors

Of 12 cases, 5 were in adults and 7 in children. The ages of the latter were 3 to 10 years, with 4 females and 3 males, 5 white and 2 colored. Pontine tumors constituted a most unsatisfactory group, because operative and microscopic verification was usually impractical. The lack of response to radiation treatment would bear out the fact that these tumors are invariably one of three types, namely, glioblastoma multiforme, spongioblastoma polare or resistant astrocytomas.

Six of the seven children are known to be dead and their average life after treatment was 5 months. One white male, aged 10 years, received a tumor dose of 5,211 r in three series of treatments, given at short intervals. In spite of our best efforts in planning roentgen therapy and his complete cooperation, he lived only 12 months.

Craniopharyngeoma

In view of the inability of the most experienced neurosurgeons to remove these frequently partly calcified suprasellar tumors and cysts, we believe in following Frazier[20] and give these patients any benefit which might obtain from such roentgen therapy.

Of 8 cases, 7 were in children aged 4 to 18 years. Four were males and three females. Five were white and two colored. One white male is living 6 years following surgery and roentgen therapy. One child was untraced but the others were living when last heard from. Only two, however, have received tumor dosage above 3,500 r.

Upon purely hypothetical reasoning, that radiation might destroy or inactivate the epithelial cells lining the cyst, Frazier[20] collected a group of children under observation in whom by this combination of treatment the symptoms appeared to be arrested. We still cannot see how the fatalistic attitude expressed in most papers will ever lead to sufficient trial of radiation to yield the data needed to determine its efficacy in this group.

Pineal Region Tumors

Of six cases with tumors in the posterior third ventricle and pineal region, five were in children aged 2 to 16 years, two were in males and three in females, and one was colored and four were white.

One ten year old white male with a microscopically verified pineal ulcer, lived only 7 months following two series of deep roentgen treatments with a tumor dose of 3,112 r.

Four unclassified tumors of the posterior third ventricle were living when last contacted. One white male, aged 10 years was living 5 years and 3 months when last contacted. The tumor was seen at operation but no biopsy was made.

We have observed calcification in these tumors and have films before and 9 months later following a tumor dose of 3,851 r.

We believe roentgen therapy should be given a thorough trial in this group of tumors.

Astboblastoma

There were two cases of astroblastoma in white males in our series. One, in a boy aged 4 years, was living 2 years and 6 months after partial removal of a tumor in the region of the third ventricle and three series of roentgen treatments with a tumor dose of 3,412 r. The adult case was also living when contacted recently. It is interesting to note that Frazier[21] and his collaborators, after studying their pooled cases of brain tumors, devote one sentence to this subject, as follows: "A few astroblastomas were irradiated but the number was so small that no conclusions could be drawn con-

cerning them." We were therefore forced to follow the advice of Bailey, Sosman, and Van Dessel[5] who say: "Although there is no conclusive evidence from our experience that these tumors are influenced by irradiation, we should think it advisable to give a course of treatments after operation because these tumors contain fairly numerous mitotic figures and are liable to recur."

EPENDYMOMA

Before discussing our small group of 5 ependymomas, we wish to again emphasize that the operative notes suggest that the tumors were incompletely removed. Only two cases were in children.

One white female, aged four years, with a classical cerebellar fourth ventricle lesion, received five series of treatments in a one year period as planned, with a tumor dose of 7,548 r. She lived 6 years and 6 days following her operation. A white male, aged four years, also with a cerebellar lesion was living 8 months when last heard from.

A young adult male with a tumor involving the right lateral ventricle, running through the foramen of Monro into the third ventricle, received a tumor dose of 3,942 r to the brain and 2,118 r to the spinal cord in three series of treatments. He was living and well and had married and raised a family 6 years and 5 months following operation. The unconventional irradiation to the entire cerebrospinal axis was based on the extent of the tumor, its location, and the fear of implantation metastases. Weaver, Dercum and Spiller[38] reported such occurrences between 1898 and 1907, and more recently Kernohan has brought up the subject. We realize the wide divergence of opinion concerning the value of irradiation in these tumors. Two important authorities discouraged therapy, but six equally authoritative publications were favorable to it. We admit that these lesions are usually relatively benign, but question the wisdom of assuming that tumors incompletely removed are or will remain non-malignant.

GLIOBLASTOMA MULTIFORME

Of 9 cases of glioblastoma multiforme, only one was in a child, a white male aged 11 years. He lived 7 months following partial extirpation and 3 series of deep x-ray treatments with a tumor dose to the right temporal lobe of 5,486 r.

In six adults who died, the average length of life was 6½ months following operation, which checks remarkably well with the 7 month survival of our single child. In one adult case studied with pre-irradiation and autopsy specimens, following a tumor dose of 3,172 r given in one series, post-irradiation autopsy specimens showed many tumor cells present. Since necrosis and hemorrhage form an integral part of these tumors, it is impossible to determine accurately the part played by tumor growth and that due to irradiation.

Irradiation does not appear to be of any value in the treatment of these tumors.

SPONGIOBLASTOMA POLARE

Only one example of spongioblastoma polare occurred in a white boy aged 14 years, who had a partial excision of an occipital lobe and a tumor dose of 1,425 r. He lived only ten months following operation, and his course was rapidly down hill. We found only one favorable report in the literature and two very authoritative opinions unfavorable to irradiation, with which our experience is in agreement.

HEMANGIOMA

Of 9 cases only one was a child, a white female aged 4 years, who was treated only one year ago. Our adult cases have yielded very unsatisfactory results but we have never had the opportunity to administer adequate tumor dosage due to the patient's failure to cooperate. We have found a few reports in the literature favorable to irradiation.

UNCLASSIFIED TUMORS

From the therapeutic standpoint this was a most unsatisfactory group of tumors, but we wish to record that such a group did exist in this series. Two children aged 13 and 16 years had cerebellar lesions which were undoubtedly medulloblastoma and they had not reached the four year survival period. There was a glioma of the optic chiasm in a boy aged 10 years. Unclassified gliomas of the cerebral hemispheres made up the other cases.

RETINOBLASTOMA

We have had two cases in negro infants, both with microscopic verification. One lived one year with recurrence following a skin dose of 5,400 r given in 100 and 200 r doses in a 40 day period. The tumor disappeared following therapy. A second case, a female aged 4 years, had a skin dose of 5,120 r to the tumor and skin dose of 2,490 r to metastases in both femora. Both these tumors were treated with 400 K.V. apparatus. No permanent

beneficial results were expected. Both tumors responded immediately to the heavy dosage and as the lesions were superficial the skin doses approximated the tumor doses.

SPINAL CORD TUMORS

Of 22 tumors, 13 were in adults and 9 were in children. We have children with unclassified gliomas living and well 5¾ and 4½ years following operation, a female with hemangioma of cord 5½ years after operation. Two unclassified gliomas are living over one year. One medulloblastoma of the cord is dead. At autopsy no tumor cells were found in the brain. An ependymoma and two unclassified gliomas are living less than one year.

The three children living and well from 4½ to nearly 6 years, and an adult who recently called to see us with a 4 year survival, make our efforts in the treatment of these tumors seem very worth while.

DISCUSSION

It should be noted from the tabulation of cases given at the beginning of this paper that no cases in children occurred in this series of pituitary adenoma, sarcoma, reticulum cell sarcoma, and meningeoma. We found roentgen therapy to be of definite value in the treatment of both chromophobe and chromophile pituitary adenomas in adults. Our two cases of reticulum cell sarcomas, differentiated from medulloblastomas by the use of Foote's silver stain, occurred in male adults and the one case traced lived only 10 months, which confirms Bailey's view[6] that these tumors are resistant to radiation. The hemangioblastomas, meningeomas and sarcomas which were incompletely removed and therefore subjected to irradiation also were found only in adults in our series. We believe all the above to be radio-resistant but we most definitely would treat these incompletely removed tumors, notwithstanding advice to the contrary in the literature. We have seen a hemangioblastoma, partially removed on two occasions, grow with alarming rapidity, and we have treated the patient following a third operation, so far with no recurrence. Meredith reported a case of meningeoma which microscopically appeared to be very benign but which recurred in a very malignant manner. It would, therefore, appear wise, in our opinion, when the tumor has been incompletely removed to administer roentgen therapy.

We are not advocates of roentgen therapy for metastatic tumors of the brain, but when no primary site is found and the microscopic diagnosis is equivocal, we do not hesitate to irradiate until more adequate diagnosis is forthcoming.

ROENTGEN TECHNIC

The technic of treatment of brain and spinal cord tumors was outlined in detail by Mandeville, Russell and Farley[26] in 1941. No changes in treatment have been made since then.

SUMMARY

1. Of 136 cases of brain and spinal cord tumors referred for roentgen therapy, 42.6 per cent occurred in children.

2. Serious attempts were made to treat tumors known to be radio-resistant which had been incompletely removed surgically.

3. The medulloblastoma was the tumor most favorably influenced by irradiation.

4. Glioblastoma multiforme and pontine tumors were completely resistant.

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Medical College of Virginia Hospital.

BATTLE CASUALTIES ON THE HOME FRONT*

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You may have heard we are at war. It is a total war—a war for survival—a war in which we may lose our lives, or even worse, the things which make life worth living—a war being fought with words and emotions as well as bullets and bombs. To win this war losses are inevitable. It is our duty to hold these losses at a minimum.

With this in mind, it seemed timely to review the situation on the home front and bring up for discussion a few of the problems that might be met by the medical profession.

In army terminology, a casualty represents a

*Read before the Roanoke Academy of Medicine, on November 2, 1942, when the author assumed the office of President.

man put out of action. In the eyes of the enemy, maiming or wounding is often preferable to killing. A dead soldier needs no attention but a wounded soldier must be treated, fed, and transported. This uses up time, equipment, and material which otherwise might be expended in fighting force. Since this is primarily a war of production, a casualty at home that delays or limits delivery of vital equipment to the front may give more aid to the enemy than the death of a soldier in battle.

Casualties on the home front may be classified as inevitable and potential.

There is no need of discussing here the usual industrial injuries. The increase in those resulting from hurry, insufficient training and experience, slowed reflexes from loss of sleep, fatigue from long hours on the job, and similar causes is the inevitable result of war and preparation for war. It appears that a maximum effort toward holding these at a minimum already is being made.

Some of the potential casualties are not so clearly defined nor as easily treated. Those which are tangible perhaps offer less difficulty, so a few of these will be mentioned first.

This war differs from those of the past in that military action is not limited to battle fields. The doctor at home may suddenly find himself in the midst of military action and be called on to treat any wounds encountered at the front, including gas poisoning, burns, and shock. All this is in addition to his usual duties and calls for a review of first aid and military surgery.

The father working at top speed in essential war industry who cracks up when he hears his son has been killed in action is as much a casualty as the son. We all may meet cases in this category and need to handle them as best we can without the services of a competent psychiatrist.

Some patients most probably will lose their lives because the specialist who might have cured them has been assigned to military duty. Others may die because medical attention is too long delayed or inadequate when it arrives. Some possibly may not be able to obtain any kind of medical service. To prevent casualties of this type, specialists are being urged to refresh themselves in other lines and all doctors are asked to systematize their work so their time and services will reach as far as possible. The public has been asked to cooperate and is doing so beautifully.

Despite all this the doctor may find himself on the casualty list. Many at home have reached the usual retirement age and are being called on to do more than they did in their prime. Others are suffering from physical handicaps and are carrying on against heavy odds. It is essential, therefore, for the doctor to meticulously guard his own health and each must be his own judge of what constitutes his maximum capacity. His fellows should refrain from carping criticism, certainly until the facts are known.

All of us are aware that the casualties previously mentioned can and probably will occur. Although the odds are heavy we feel somehow the strength and ability will be found to meet them when it is necessary.

Above and beyond these physical casualties there is another type, intangible, hard to define, and hard to recognize. War does something to peoples' minds and emotions. It could hardly be called a fear psychosis, and yet, reduced to its last analysis, fear does appear to be a major factor. The President even mentioned freedom from fear as one of the four freedoms for which we are fighting. On the other hand, it is a logical and perhaps necessary emotion. Fear of pain and fear of death lead us to protect our health. Fear of punishment in this world or the next influences many of our actions. Fear for our children and their future urges us to throw out safeguards for their protection. Fear of slavery makes us fight to the death to defend our freedom.

This could only mean that there are two kinds of fear, one that is wholesome and necessary to our well being, and one that is dangerous and perhaps pathological. The coward is afraid to act, the brave man is afraid but acts anyway.

Physicians, whether they wish it or not, hold an outstanding position in every community. They are given credit with having logical and analytical minds. More than they themselves realize people turn to them when they are afraid. In times like these they often want and need more than physical relief. Few doubt that victory at arms eventually will be ours. A great many fear it will be won at too great a cost in those things we hold most dear. It is our duty as citizens to sit at the consultation table on lay problems, and if we cannot alleviate

the fears with which we are confronted, at least to be in a position to lend some constructive thought and advice.

The education of our children is a problem in mental prophylaxia. A nation can be destroyed by teaching false ideas to those without knowledge. This is well expressed by Dr. Lancaster, Superintendent of Public Instruction in Virginia, who says: "Knowledge without thought is futile. Thought without knowledge in perilous." Some feel that the movement to revise the system of education in Virginia is an experiment in Socialism and aimed at teaching children to think along these lines before they have acquired a basic foundation of facts on which to build constructive thought.

Although most of us have children in school, few know that Dr. Caswell, of Columbia Teachers' College, has been introduced in public as the father of the Virginia Program of Education. Our state is the first to attempt this program and for the past ten years has acted as a guinea pig. Have we read the textbooks in Social Science now being used in our schools? Are we prepared to express an opinion on the possible results of this experiment? Is it what we need and want, or is it possible we may awake too late and find our children have been "sold down the river?"

Have we read the new Bill of Rights being introduced by the National Resources Planning Board? Among its many Utopian objectives for post-war planning is a government guarantee of adequate medical attention for all.

Another potential intangible casualty is the sense of moral values. To a certain degree this accompanies all wars. This war, it seems to some, was caused by a loss of moral values. It seems to go deeper than just a laxity in morals leading to sexual promiscuity with its usual increase in the so-called social diseases. These are bad but, like drunkenness, have a tendency to correct themselves by visible examples of their own viciousness. This loss of moral perception seems to shake the foundation on which the superstructure of our national life rests. It brings with it loss of confidence in others and then in ourselves. This in turn leads to a state of futility and confusion. To illustrate: When our senators were allowed an "X" card for gasoline on oath that it would be used only for business, volumes were written on the unfairness and injustice of their being permitted to use unlimited amounts of gasoline for any and all things they wished. Not one word was said about how low a social order must have sunk when no one is ready to even intimate that the oath of its leaders can be accepted at face value.

"What shall it profit a man if he gain the whole world and lose his own soul," is not the idle patter of a religious fanatic. Nations like individuals have a soul. It is a source of inner strength. When it is lost there is nothing else that can take its place.

We all feel that a discussion of things pertaining to the soul rightfully belongs in the field of religion. That is true. On the other hand, they are so essential to our individual and national well being that they warrant serious consideration, not only by doctors, but by all thinking men in every community. This is especially so in times of crisis.

A world revolution is at hand. A new social order is being born. There can be no question that some of the things we cherished will be lost forever. Many more can be lost if physicians fail to lift their heads from the sands of purely professional matters and think they are doing their whole duty when they attempt to heal only bodies when the spirit is broken.

Lewis-Gale Hospital.

SUBCORTICAL INTRACRANIAL HEMORRHAGE OF SURGICAL SIGNIFICANCE—with a Report of Eight Cases*

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Introduction: The medical literature pertaining to extradural and subdural (both acute and chronic) intracranial hemorrhage as well as that concerning subarachnoid and deep cerebral hemorrhage (the so-called apoplectic hemorrhage or stroke) is very extensive in the pathological, the internal medical, and the surgical fields. However, the fact that cer-

*Read at the Richmond meeting of the Neuro-Psychiatric Society of Virginia, February 11, 1942.

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tain subcortical clots occur in the brain that are capable of operative attack and cure is only beginning to be recognized, and it is concerning this latter group that this report has to do. Eight cases of subcortical intracranial hemorrhages in the cerebrum, lateral ventricle, or cerebellum will be briefly presented. All these cases were operated upon, and all recovered post-operatively.

There is no pathognomonic clinical syndrome that leads unmistakably to the diagnosis of a subcortical brain hemorrhage of the more or less massive circumscribed type, acting pathologically as would any mass lesion of the brain, and hence a fitting case for surgical relief. Most of the eight cases in this series—as in those reported by other writers on the subject—were operated upon as brain tumor suspects, and only at operation was the true nature of the lesion disclosed. However, Klemme[1] recently reported (1942), in an analysis of twenty-five cases of intracranial, subcortical "surgical" hemorrhages that: In twelve instances, a diagnosis of brain tumor was made pre-operatively, hemorrhage with clot formation was diagnosed pre-operatively in six cases, and in the remaining seven, no pre-operative diagnosis was made.

The apparent rarity of a subcortical brain hemorrhage of surgical significance should be stressed. Until September, 1941, only seventeen cases of this type were reported in the entire medical literature. At that time, Klemme[2] reported six cases (to which he later[1] added two cases) and Pilcher[3] reported eight cases, bringing the total to date, exclusive of those herein reported, to thirty-three cases recorded in the literature.

Kaplan[4] has stated (1937), in effect, that the traditional attitude of symptomatic treatment only in patients who appear to develop apoplectic strokes is, in certain selected cases, entirely wrong, and this view is also stressed by Klemme[1, 2]. Since the introduction of ventriculography in 1918 by Dandy, it is a simple enough matter to determine, by a relatively minor procedure, whether or not there has been a massive hemorrhage capable of surgical attack, although it must be remembered that cerebral thrombosis alone (usually a non-surgical lesion in the present state of our knowledge) is capable, in the first few days after the thrombosis occurs, of distorting the ventricles also, thus simulating a mass lesion of the brain when ventriculography is performed.

Kaplan[4] operated on two patients with large cerebral hemorrhages that recovered; both were apparently moribund on admission; Adson[5] and his colleagues reported a similar case in 1940 in which the symptoms suggested a rapidly growing cerebral glioma in a thirty-eight-year-old woman who was in very poor condition on admission to the clinic. The value of any operation whatever in that case was seriously questioned, but it was decided to verify the lesion, at least, by a biopsy through a burr opening aspiration. In introducing the ventricular needle into the cerebral hemisphere over the site of the suspected "glioma", a large (60 c.c.) liquid blood clot was evacuated and drained, and the patient made a complete and early recovery. These writers concluded that no patient should be refused at least a limited cerebral exploration in similar cases because of the possibility (remote though it may be) of such a completely curable lesion being present.

Ecker and Love[6] reported, in 1939, a case of posttraumatic, cerebral (subcortical) hemorrhage with delayed symptoms simulating a brain tumor that recovered after operation. These authors stated that patients with large cerebral hemorrhages may be divided, according to clinical features, into three groups:

(1) Those in which a sudden cerebral episode occurs, terminating in death within a few hours.

(2) Those in which symptoms last for days or weeks and are largely suggestive of meningeal irritation (with associated subarachnoid hemorrhage).

(3) Those in which many months or even years after a primary episode there is evidence of increased intracranial pressure.

Their patient belonged to the last of the three groups. They gave their patient a course of X-ray treatment after operation as a prophylactic against recurrent hemorrhage (? angioma).

Craig and Adson[7], in 1936, emphasized that spontaneous intracerebral hemorrhage is rather rare but that it has occurred often enough to be of importance in the differential diagnosis of brain tumor. In each of their nine cases reported at that time, craniotomy was performed for a presumed tumor. All their cases were situated in one or the other of the cerebral hemispheres and followed trauma, strenuous exercise (such as appeared to be a precipitating factor in at least one of our patients—Case I; infra), severe emotional strain, or endocarditis;

one case occurred during streptococcus viridans endocarditis (i.e., an intracerebral hemorrhage surgically removed), the patient recovering sufficiently to return to her home where she eventually succumbed from her endocarditis. In the majority of their cases, the hemorrhage was accompanied by an attack of unconsciousness and by progressive hemiplegia, but the progression of symptoms became more or less stationary within a short period of time. However, when such progression seemed to arrive at a standstill, *signs of increased intracranial pressure developed.* In some instances, the hemiplegia was *slowly* progressive and the symptoms therefore resembled those that develop as a result of tumor. The occasional development of unilateral or generalized convulsions also should be stressed as part of the clinical picture of subcortical cerebral hemorrhage.

Concerning apoplexy, Kaplan[4] stated, in 1937, that the criteria for surgical intervention cannot be stated definitely, but operation is occasionally justified in *young* or *middle-aged individuals* who survive forty-eight hours or more after the initial cerebral vascular accident and *whose symptoms are progressing.* A preliminary ventriculogram for precise localization of the lesion is advisable. Those patients, on the other hand, who are afflicted with advanced hypertension and renal disease or who show massive hemorrhage as revealed in the spinal fluid are usually best cared for medically rather than by operative intervention. However, it should be stressed that what is apparently a massive spontaneous subarachnoid hemorrhage may be bleeding from a cerebral tumor. Klemme[8] reported such a case in a young man of nineteen, admitted several times to the hospital with symptoms and signs suggesting a classical type of spontaneous subarachnoid hemorrhage with very bloody spinal fluid, a spastic neck, and normal fundi. In one of these recurrent bleeding episodes, the patient died and at postmortem examination a rather circumscribed glioma in the right cerebral hemisphere was found, from which bleeding had occurred into the subarachnoid space. Such instances of massive subarachnoid hemorrhage from a tumor with concomitant great aggravation of symptoms are admittedly rare (probably less than 1.0 per cent in any series of verified brain tumors). Klemme's patient, however, had a well-developed left homonymous hemianopsia demonstrable between his attacks of bleeding, a finding rather unusual in spontaneous subarachnoid hemorrhage from a basilar vessel alone.

Kaplan[4], in his plea for considering certain cases of apoplexy as surgically important, quoted Cushing who stated in 1903 that the temporary amelioration of the severe symptoms in apoplexy is a sufficient justification for future attempts to afford surgical relief in certain carefully selected cases. Kaplan also mentioned Spiller's statement (1908), "the duration of life after the onset of cerebral apoplexy may be many hours (or days)"*. However, in this connection, it should be emphasized that many cases of supposed cerebral hemorrhage with apoplectic onset are, in reality, *extensive thromboses,* usually of branches of the middle cerebral artery with cerebral softening beyond the thromboses. Such lesions are rarely of surgical significance, but occasionally have been operated upon by neurological surgeons with recovery of the patient.

The following six cases (see two addenda, infra) of surgically treated subcortical hemorrhage of the brain are briefly presented; five were in white patients and one colored; there were four males and two females. Three were observed and treated at the Medical College of Virginia; the other three at the University of Virginia. Four were subcortical *cerebral* hemorrhages in one or the other hemisphere, one was a massive unilateral hemorrhage in the right *lateral ventricle,* and the sixth was an *intracerebellar* hemorrhage in the left hemisphere.

†*Case I.* Dan G., a thirty-nine-year-old white filling station operator, was admitted to the University of Virginia Hospital, August 14, 1940, complaining of convulsions and paralysis of the right arm. The symptoms began one year before admission when, while wrestling, numbness and weakness of the right arm developed. Three days before admission to the hospital, he had had his first of three convulsions involving chiefly the right arm.

Examination disclosed a right lower facial weakness with moderate weakness of the right arm, the right leg being unaffected. The tendon reflexes were exaggerated on the right side with a positive Hoffmann's sign on that side and several beats of ankle clonus as well. The blood pressure was 130/95, and the pulse was ninety per minute. There was no astereognosis and no aphasia, which was remarkable

*The parenthetic phrase was added by the present writer.

†Serologic and spinal fluid tests for syphilis in all of the eight cases were negative.

in view of the location of the lesion in this case, the patient being right handed. The optic disks were normal. An electroencephalogram suggested a cortical lesion in the left motor and pre-motor areas. The diagnosis was believed to be a left cerebral lesion, probably vascular, in the nature of an angioma or possibly a cerebral thrombosis. Attempts at ventriculography were unsatisfactory both through the posterior parietal and the frontal regions due to very small ventricles. A few c.c. of xanthochromic fluid were encountered beneath the dura, frontally, on the left side. Two days later, a left

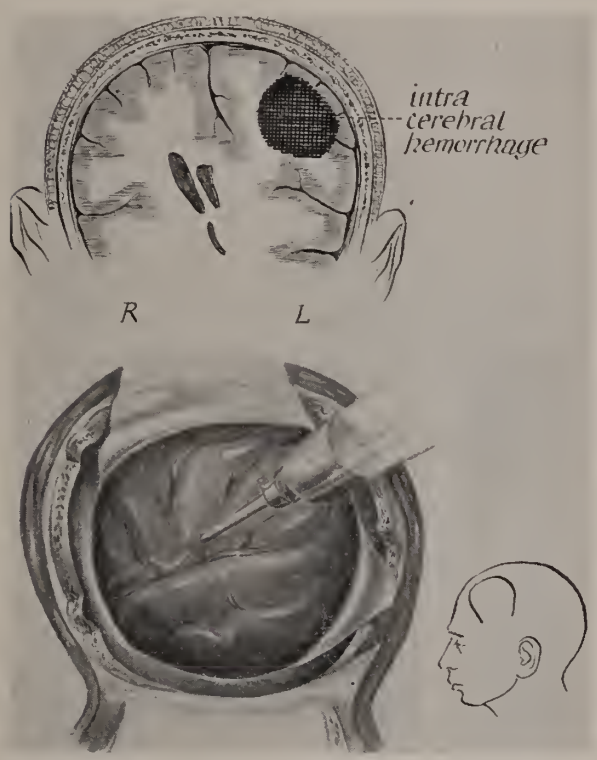

Fig. 1, Case I.—Artist's drawing showing the aspiration of the liquid clot beneath Broca's area (left lower drawing), the proximity of the clot to the cortical surface (upper drawing), and the location of the osteoplastic flap through which the hemorrhage was removed (right lower drawing).

frontal osteoplastic flap was turned down under local (1% novocaine) anesthesia and a few mm. subcortically, in the region of Broca's area, there was found a large intracerebral liquid clot (50 c.c.) which was evacuated by aspiration through a small cortical incision (Fig. 1). Five days later, the motor power of the right arm was normal, and he has since continued in good condition for seventeen and a half months with a very slight hesitancy in speech as his only disability, no convulsions having occurred postoperatively.†

Case II. Ulus D., an eighteen-year-old white millworker, was admitted to the University of Virginia Hospital (on the Neuro-Psychiatric Service, Dr. D. C. Wilson, Director), on October 14, 1940, complaining of severe frontal headaches of one month's duration with weakness in the left arm and leg for eighteen days before admission. There was a vague history of his having struck his head sharply in the mill without a definite concussion, several weeks before admission. This history of trauma was possibly not reliable for several reasons, and is certainly to be considered doubtful.

Five weeks before admission, the patient had had a generalized convulsion with unconsciousness. The weakness of the left side had occurred rather suddenly and was associated with subjective numbness and tingling on that side as well. For several days at the time of onset of the left-sided weakness, he was unable to move this side at all. The patient also vomited frequently, had diplopia and considerable vertigo.

On examination, the boy was obviously suffering severely from headache. There was a bilateral choked disk of four diopters with retinal hemorrhages and weakness of the left sixth cranial nerve function; there was no gross hemianopsia detectable. There was marked weakness of the left arm and leg as well as increased tendon reflexes and ankle clonus on that side. Astereognosis in the left hand was present. The blood pressure was 110/68, and the pulse was ninety-two per minute. Skull films showed widening of the suture lines. A chest film suggested puerile tuberculosis of the left lung. Because of an associated cerebellar-like ataxia of the left extremities, a pre-operative diagnosis was made of a right cerebral vascular lesion (due to the sudden onset) or a left cerebellar tumor. Ventriculography again demonstrated very small ventricles, thus immediately ruling out a cerebellar tumor, but not giving a clear enough delineation of the ventricles to demonstrate just where in the right cerebral hemisphere the lesion lay. Therefore, in order to preserve vision, gravely threatened by the high choking of the disks and the retinal hemorrhages, a right subtemporal decompression was performed. In aspirat-

†Since this paper was first written, the patient had a single right sided convulsion (February 11, 1942) and X-ray therapy was subsequently given (left cerebral hemisphere).

ing deeply (at a depth of six to seven cm.) in the right temporal region, a large liquid intracerebral hemorrhage (60 c.c.) was encountered (Fig. 2) and entirely removed by aspiration alone. The patient made a rapid recovery, being discharged fifteen days after operation with marked improvement in the motor power of the left side and in good general condition, being entirely relieved of headache. He has been seen on several occasions since operation. The choked disks subsided to normal in a few weeks, and the decompression has remained quite flat with normal pulsations. When last heard from, twelve months after operation, he had moved to a distant state, was symptom-free, had gained fifteen pounds in weight, and was working daily on a farm. No postoperative X-ray therapy was given at any time.

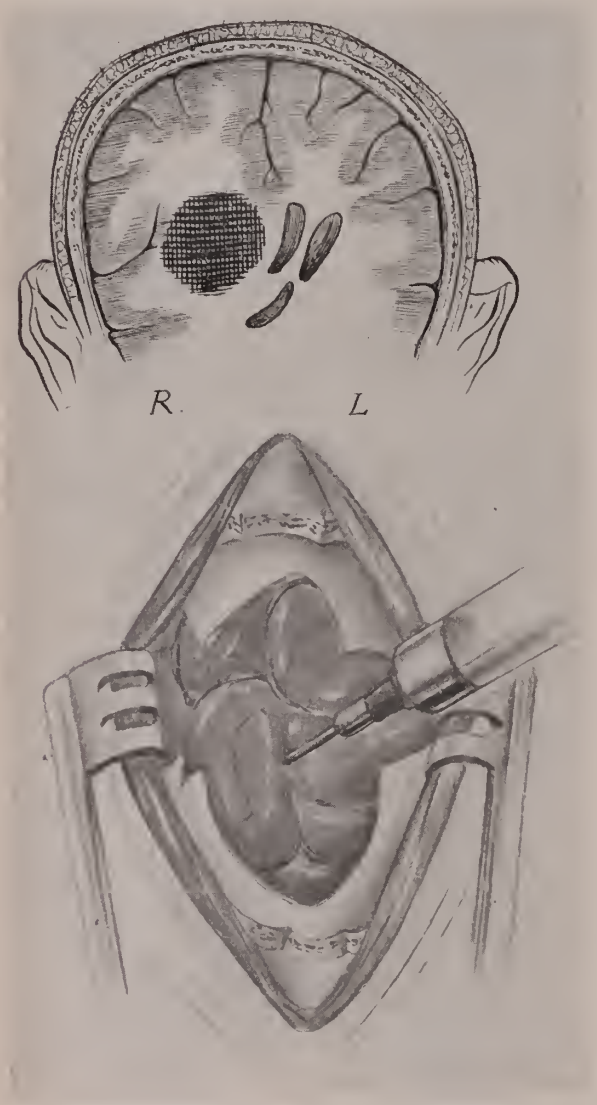

Fig. 2, Case II.—Artist's drawing showing aspiration of the large liquid clot located deeply in the right temporal lobe (lower drawing). The upper drawing shows the approximate depth of this hemorrhage beneath the cortex.

Case III. William N., a twenty-six-months'-old white boy was admitted to the Memorial Hospital, Medical College of Virginia, on November 23, 1939. His parents stated that he developed convulsions three weeks after receiving a severe blow on his head six and one-half months before admission. There was a transient weakness of the *left* arm after the convulsions which disappeared in a few hours. One week after this episode, however, he had a definite *right-sided* Jacksonian convulsion resulting in a residual right-sided weakness which persisted from the time of onset until operation five and one-half months later. After the convulsion causing the right-sided weakness, he lost the ability to speak even the few words which constituted his vocabulary before the convulsions. Many episodes of blank staring and facial twitching occurred. There was no history of any birth injury or infections in the first one and a half years or more of life.

Fig. 3, Case III.—Antero-posterior ventriculogram showing a dilated left lateral ventricle and the third ventricle which latter structure is deviated toward the left side (dotted line and arrows) by a right cerebral mass lesion (intracerebral hematoma), precisely as a tumor would behave.

On examination the patient was very drowsy. The head was of normal size and contour, although the

vessels over the forehead were unusually prominent. Inspection of the optic disks showed blurring of the nasal margins. There was moderate weakness of the right arm without evidence of spasticity. The patient had been unable to move the right leg for ten weeks before admission.

Two days after admission a ventriculogram was done through bilateral frontal burr openings which demonstrated a normal dura and subarachnoid space on the right, but on the left a grayish-brown membrane of tenacious character four mm. thick was seen beneath the dura; apparently the child had

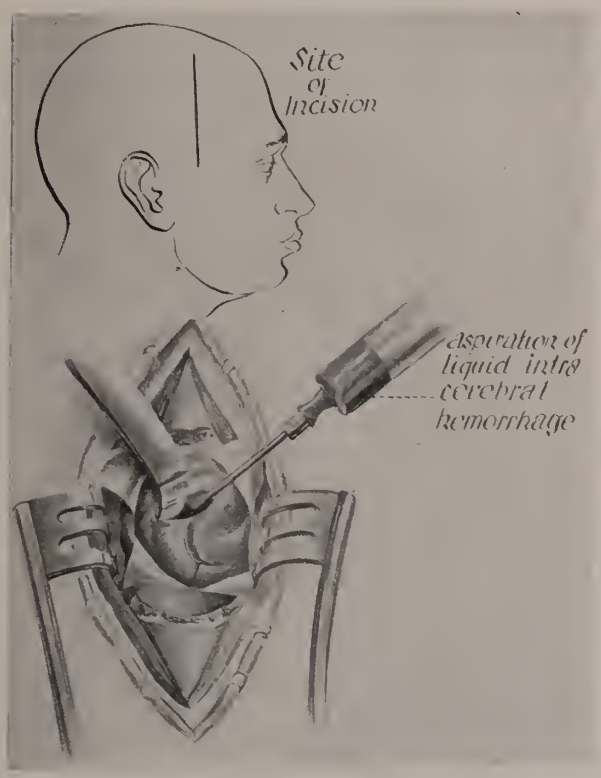

Fig. 4, Case III.—Artist's drawing showing the aspiration of the clot in the right fronto-temporal region through a small cortical incision (lower drawing). The upper drawing shows the skin incision and location of the operation.

developed a left subdural hematoma when he struck his head six and one-half months before admission. The air plates showed a moderately dilated left lateral ventricle with no air crossing to the right side. The left lateral and third ventricles were definitely shifted to the left by a presumed right cerebral (fronto-temporal) mass lesion (Fig. 3). Through an enlarged burr opening in the right fronto-temporal region, an old intracerebral hemorrhage (Fig. 4) was evacuated (by Dr. Coleman) of about 60 c.c. in volume. The condition of the child improved; he was able to move the right leg the night after operation for the first time in ten weeks. He left the hospital fifteen days after operation and has since done well. Twenty months after operation the child's father wrote us that the patient was much improved, especially in recent months.

Comment: The chief interest in this case is that the patient developed a *right-sided* convulsion (with residual weakness on that side) and aphasia following a head injury, the hemorrhage being in the *homolateral* side of the brain. This is seen not infrequently in cases of chronic subdural hematoma and is to be explained by pressure of the *opposite* crus cerebri against the sharp edge of the incisura, producing, thereby, convulsions and/or weakness of the extremities on the same side as the cerebral mass lesion.

Case IV. Agnes C., a thirty-seven-year-old colored woman, was admitted to the St. Philip Hospital, Medical College of Virginia, on October 23, 1941, complaining of severe right frontal headache of three weeks' duration. She had had high blood pressure for four years although the highest systolic reading recorded during her three weeks in the hospital, both before and after operation, was 170 mm. Hg. The headache began suddenly while at work and radiated to the right eyeball. The pain was so severe that she went to bed immediately. Since the onset of the headache, she had developed nausea and drowsiness. The pain in her head was not typical of that seen with a basilar aneurysm (circle of Willis). The fundi showed one diopter of choking of the right and only blurring of the left optic disk. There was a left homonymous hemianopsia. The day before operation, the patient developed a left lower facial weakness for the first time. The deep tendon reflexes were equal bilaterally and no pathological reflexes were elicited. X-ray films of the head, incidentally, showed a purulent right-sided sinusitis. Bilateral anterior burr openings and aspiration of each frontal lobe ruled out a frontal lobe abscess. A left-sided ventriculogram through a previously placed anterior burr opening showed air only on the left side without displacement of the left lateral ventricle. In attempting to enter the right posterior ventricular horn to obtain better air plates, old bloody fluid was encountered in the right parietal lobe at a depth of two cm. The ventriculogram was therefore dispensed with, and the clot evacuated

(by Dr. J. L. Thomson, Resident Neuro-Surgeon at the Medical College of Virginia) through a right parietal decompressive procedure together with a transection of the cerebral cortex (Fig. 5). Thirty c.c. of old clotted and liquid blood were removed, the ventricle not being entered at any time. The walls of the cavity were white and glistening after all the clot had been removed; the brain thereafter collapsed, obliterating the cavity, and the cortex receded from the dura although it protruded markedly through the dura before the clot was evacuated. The dura was tightly resutured without drainage. The patient made an uninterrupted convalescence and when last seen in a follow-up visit two and one-half

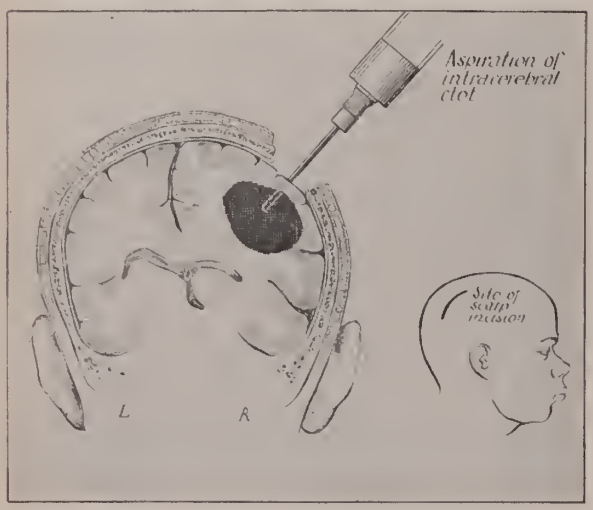

Fig. 5, Case IV.—Artist's drawing showing the evacuation of the subcortical clot in the right parietal region through the enlarged burr opening originally placed for ventriculography (left hand drawing). The right-sided sketch demonstrates the site of the operation.

months after operation, her general condition was excellent. There was no headache and she was about to resume her usual duties. The optic disks were well outlined at that time.

Case V. This case, previously reported in greater detail two years ago[9], was included at that time in a group of five unusual types of head injury. It is that of a massive unilateral ventricular hemorrhage following the removal of which the patient made a complete recovery.

Christine M., a nine-year-old white girl, was admitted to the University of Virginia Hospital on November 20, 1938, at which time she had severe headache and vomiting and was, at intervals, in a semiconscious state of two days' duration. Three days before admission, she was struck in the face by a swing while playing at school, at which time she was only slightly dazed. A lumbar puncture before admission (the day after the injury) showed a hazy fluid with nine white cells and a few red blood cells per cubic mm.; a few hours later definite weakness of the left side and drowsiness had developed.

On admission, the patient was very drowsy, the optic disks were hazy, and there was complete paralysis of the left side with associated increased tendon reflexes on that side, but no pathological ones. There were several port-wine nevi in the skin of the left shoulder. Skull X-ray films were normal. It was thought that the patient had a probable right cerebral hemorrhage, although tumor (rather rare in the cerebral hemisphere in patients of this age)

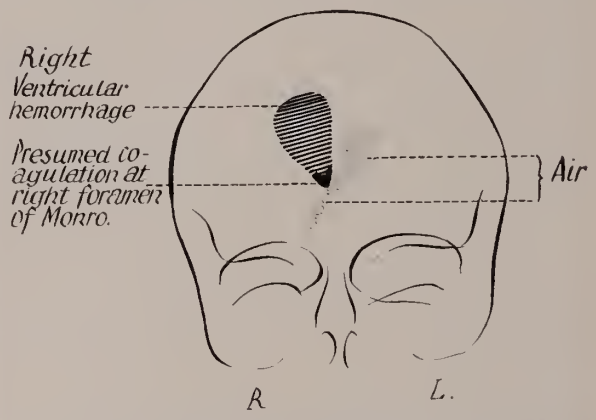

Fig. 6, Case V.—Artist's sketch demonstrating the pathology in this case. Spontaneous coagulation must have occurred at the right foramen of Monro as a previous ventriculogram had shown air only in the left lateral ventricle and the third ventricle. Furthermore, the fluid previously removed by lumbar puncture and during ventriculography (via the left lateral ventricle before evacuation of the right ventricular clot) was practically free of blood (see text).
By kind permission of The Southern Medical Association, and The Southern Medical Journal.

was also considered a possibility.

Through posterior parietal burr openings a ventriculogram was attempted, first on the left side, 15 c.c. of very slightly blood-tinged fluid being obtained. X-ray films showed air only in the left lateral ventricle and the third ventricle, both of which were displaced toward the left side. A ventricular needle was then readily inserted in the right lateral ventricle with the primary purpose of injecting air in this ventricle also, and 25 c.c. of extremely bloody fluid were immediately obtained from that ventricle (right), which did not clot on standing. Apparently the patient had had a massive right lateral ventricular hemorrhage with spontaneous coagulation at the right foramen of Monro (Fig. 6) as fluid *previously* obtained from the left lateral

ventricle and the spinal fluid (by lumbar puncture before admission) showed practically no blood. The right lateral ventricle was tapped again four hours later and 20 c.c. of very bloody fluid were obtained containing 1.9 million red blood cells per cubic mm. Strong sedation, including several doses of paraldehyde, was necessary for a few days, because of extreme restlessness, after which the patient made an uneventful recovery. She was discharged fifteen days after operation with only very slight weakness of the left arm remaining as a residual finding. A follow-up report eleven months after operation stated that the patient was in excellent condition.

Comment: The possibility that this patient had an angioma in or contiguous to the right lateral ventricle must be considered, especially in view of the port-wine nevi observed on the child's left shoulder. A similar case has been reported by Craig and Lipscomb[10] who described, in 1938, a unilateral right ventricular hemorrhage in a twenty-four-year-old man that simulated a brain tumor; this was likewise successfully removed through a right cerebral osteoplastic flap with excision also of an angioma in the ventricular wall. These writers correctly state that most intraventricular hemorrhages reported in the literature were found at necropsy after a sudden sharp pain in the head, prostration, and death. In their patient, a slight head injury without unconsciousness had occurred three months before severe symptoms developed, leading to operation. The importance of trauma in their case is, therefore, doubtful.

Case VI. The last case (see two addenda, infra) is that of a left *intra-cerebellar* hematoma which was evacuated about sixteen and one-half years ago. The patient is alive and well today without residual symptoms. Only one similar case has been reported (to the writer's knowledge) in the literature to date (to be referred to after *Case VI* has been briefly presented).

Edward M., a twenty-six-year-old white bus driver, was admitted to the Memorial Hospital, Medical College of Virginia, on October 21, 1925, complaining chiefly of headache, vertigo, and vomiting. Five weeks before admission he first developed, spontaneously, pain in back of the left ear. There had been no head injury or discharge from the ears at any time. Several abscessed teeth had been found a few weeks before admission. Vertigo was very marked before admission to the hospital. Unsteadiness also developed and headache as well, which was very severe when he moved about to any extent. He was bed-fast for two weeks before admission. Nausea and vomiting were marked when lying on his back.

The pulse rate was never less frequent than seventy per minute during his hospital stay both before and after operation, respiration was normal, and there was no fever except for 99.2° the day after operation. There was tenderness on palpation over the left cerebellar fossa. The optic disks were well-outlined although the retinal vessels were engorged. Diplopia was present and there was slight nystagmus in both lateral directions on some days, and on others no nystagmus was seen. The patient almost invariably vomited when turned on his back, so that a complete neurologic examination was difficult, if not impossible. He preferred to lie on the *right* side. The neck was slightly spastic and hearing was slightly impaired on the left side only. There was no tinnitus. A nose and throat consultation definitely ruled out labyrinthitis and acoustic tumor. *No ataxia of the extremities or adiadokokinesia was present.* X-ray films of the mastoids revealed no abnormality on either side.

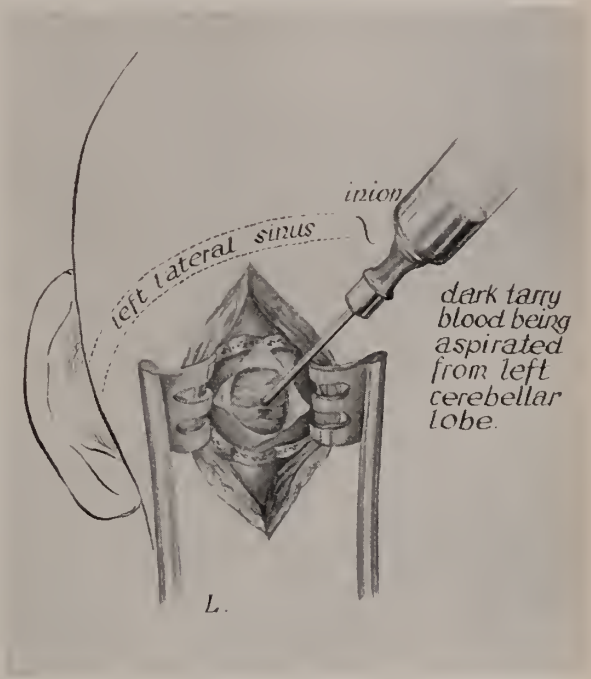

Fig. 7, Case VI.—Artist's drawing showing the left intracerebellar clot being aspirated through a ventricular needle. Removal of this liquid clot under novocaine anesthesia caused immediate and permanent relief of the severe headache and other disabling symptoms.

At operation (by Dr. Coleman) a burr opening was made over the left cerebellar hemisphere, 1% novocaine anesthesia being used. At a depth of two cm. beneath the cortex, 15 c.c. of thick, tarry-black blood were aspirated, the cortex being under considerable pressure when the dura was first opened (Fig. 7). The cavity was drained with two drains which were removed twenty-four hours later. Immediately on aspirating the hematoma, the patient exclaimed, "You hit the spot, Doctor, I feel much better now". He made an uneventful recovery, and left the hospital nine days after operation, relieved of all his symptoms, and has remained so to date (sixteen and one-half years after operation), according to his family physician.

Comment: Such a case is extremely rare and is of interest (apart from the absence of homolateral ataxia or adiadokokinesia) chiefly as a medical curiosity, there being only one other case, successfully treated surgically, on record in the medical literature to the writer's knowledge. This other case was described recently (September, 1941) by Dr. Cobb Pilcher, being included in his report of eight cases of subcortical (surgical) hematoma[11]. His case was that of a twenty-seven-year-old man who developed left-sided ataxia, vomiting, and vertigo four months after a playful scuffle in which he did not injure his head. At operation, through a bilateral suboccipital craniectomy, a left cerebellar clot was removed 3 cm. beneath the surface, a transcortical incision being made. The hematoma also had compressed the left side of the brain stem. Microscopic examination of the wall of this blood cyst revealed no evidence of neoplasm. Twelve months later, the patient was entirely well without evidence of any recurrence of the hemorrhage.

ADDENDUM I

Since the above six cases were observed and this paper first written, a seventh one has been operated on at the Medical College of Virginia Hospital. A twenty-eight-year-old white man was admitted to the Medical Service of Dr. W. B. Porter (February 19, 1942) with severe diabetes mellitus requiring 190 units of insulin per day. In addition, he had had left-sided convulsions for seven years beginning in the left leg. Twelve days before operation, another convulsion had occurred resulting in complete left-sided hemiplegia. The optic disks were normal. The spinal fluid and ventricular fluid both were xanthochromic. In the plain X-ray films, the pineal gland was definitely shifted to the left side. Ventriculography showed a right parietal mass lesion near the midline superiorly. A parasagittal meningioma was strongly suspected. Immediate operation (Dr. J. L. Thomson, March 3, 1942) disclosed a deep right parietal subcortical liquid clot (40 c.c.) communicating with the right lateral ventricle, evacuated through a transcortical incision and aspiration. No tumor elements were found in this clot on frozen section examination. The dura was tightly resutured. His immediate post-operative condition was quite satisfactory.

ADDENDUM II

An eighth case of subcortical hemorrhage has been operated on since this paper was first submitted for publication:

Willis G., a 27-year-old colored laundry worker, was admitted to St. Philip Hospital, Medical College of Virginia, on June 11, 1942, complaining of severe headache which had developed spontaneously several weeks before admission. On examination, there were no signs of increased intracranial pressure but slight weakness of the left side was present. On June 22, 1942, a ventriculogram (via the left anterior horn) showed a ventricular shift to the left side caused by a right cerebral mass lesion. As air was seen only in the left lateral and the third ventricles, the right frontal region was tapped in the hope of filling the right lateral ventricle with air but, in the course of this procedure, a subcortical liquid clot (30 cc) was evacuated from the right posterior frontal region (not connected with the ventricle), and the patient made an uneventful recovery, being discharged fifteen days after operation in excellent condition. He has since resumed his work in the laundry.

SUMMARY AND CONCLUSIONS

1. Eight cases of subcortical hemorrhage of the brain of surgical significance have been presented. All were operated upon with recovery. Six were in one or the other of the *cerebral hemispheres,* one was in the right *lateral ventricle* with sparing of the other ventricles, and one was in the left *cerebellar hemisphere.* Thirty-three subcortical clots of the brain treated surgically have been reported heretofore in the literature.

2. There is no pathognomonic syndrome of aid in diagnosing such a clot pre-operatively, many of them

being considered as tumor suspects before operation, although occasionally the correct diagnosis has been made *pre-operatively.*

3. The development of *sudden* symptoms of increased intracranial pressure—suggesting, as a rule, intracranial hemorrhage of one type or another, even if associated with bloody spinal fluid so typical of massive subarachnoid hemorrhage (either primarily in the subarachnoid space or in the ventricles)—should not invariably commit the patient to a diagnosis of massive apoplexy or ruptured basilar aneurysm. This is especially true if the onset of symptoms is associated with a *homonymous hemianopsia,* which finding appears to make a diagnosis of a surgical subcortical clot not only possible but, in the occasional case, probable, particularly if the symptoms and morbidity of the patient do not develop too precipitously. A study of the cases of subcortal cerebral clots occurring in the literature to date certainly supports such an opinion.

4. A review of the eight cases reported herewith, and of those referred to in the introduction of this paper, leads to the conclusion that no patient, however moribund from an apparent mass lesion of the brain, be it, presumably, tumor or intracranial bleeding, should, in most cases, be refused at least a limited exploration through a burr opening over the appropriate area, preferably after ventriculography, and aspiration with a ventricular needle. Occasionally a surprisingly happy solution will be encountered which is undoubtedly life-saving for the patient and of inestimable satisfaction to all physicians in charge of the case.

N. B. The writer wishes gratefully to acknowledge the kind permission of Dr. Coleman to include Cases III and VI in this paper.

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1200 East Broad Street.

SOME RECENT ADVANCES IN THE DIAGNOSIS AND TREATMENT OF CUTANEOUS FUNGUS INFECTIONS*

ALLEN PEPPLE, M.D.,
and
RICHARD W. FOWLKES, M.D.,
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In man there are many diseases which are the result of fungus infections. Due to the fact that keratin is utilized by many of these fungi, the skin is very frequently invaded. In this paper we shall discuss some of the cutaneous fungus diseases.

Tinea or ringworm of the scalp is frequently seen among the poor. It is a disease of childhood, boys being more often affected. At the dermatological clinic of the Medical College of Virginia the disease is more prevalent in negroes. The parents usually accompany the child with a complaint of "bald patches", "tetter", or "ringworm". A good many of the cases are sent to the clinic by the school nurse. On close inspection the "bald patch" is found to be covered with broken hairs. The number and size

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*Read before the annual meeting of the Medical Society of Virginia, at Virginia Beach, October 6-8, 1941.

of the area varies considerably. They may or may not present signs of inflammation. The diagnosis of ringworm may be established with the microscope. A number of the broken hairs (stubs) are placed on

Fig. 1.—Ringworm of the scalp (animal type).

a slide and soaked in a 20 or 30 per cent solution of potassium hydroxide. Spores are easily identified If the spores are large and oblong one may suspect a Trichophyton. This type of infection is rarely seen. Small round spores are the ones generally observed and they are known as Microsporons. Their arrangement may be described as mosaic. There are two species of Microsporons; Microsporon audouini (human) and Microsporon lanosum (animal). It is impossible to differentiate them in a potassium hydroxide preparation. This may be accomplished only by appropriate cultural studies. The following observations may also help in differentiating the particular organism:

M. audouini (human type)	M. lanosum (animal type)
1. "Patches of baldness" smaller	1. Large "bald patches"
2. Inflammation rare	2. Inflammatory reaction encountered frequently.
3. Lesions limited to the scalp	3. Lesions may be found on other parts of the body
4. No history of infected kitten or puppy	4. History of infected kitten or puppy.
5. No reaction when tricho phytin is injected intracutaneously.	5. Usually react to intracutaneous injection of trichophytin.

In recent years Wood's light (filtered ultraviolet rays) has been used as an aid in making the diagnosis Microsporon infections. The infected hairs fluoresce when the patient is placed under a source of these rays in a completely darkened room. The infected hairs emit a bluish green light while the uninfected hairs are black. In this manner the extent of the infection may also be determined; a good many hairs which appear normal to the naked eye will fluoresce.

Infections of the scalp due to Trichophyton require very little treatment. This is true because the inflammatory reaction which results from this infection helps to destroy the organism. There is a local and general immunity produced which can be demonstrated with intracutaneous injection of trichophytin. Mild antiseptic ointments suffice in the treatment of these infections.

As pointed out in the table, Microsporon audouini infections produce very little inflammation and consequently a minimum of immunity results. Here it is necessary to epilate with roentgen rays.

Microsporon lanosum incites inflammation and

Fig. 2.—Tinea pedis (athlete's foot).

with it a certain amount of resistance to the infection develops. Here gentle antiseptic local treatment is sufficient. One may apply a mild antiparasitic ointment locally; and the scalp should be washed once weekly with ordinary soap and water.

"Athlete's foot" is the lay term for a fungus infection which involves the feet, particularly the toes. It has been estimated that 50 to 90 per cent of the adult population has been infected. This infection is seen more often in men during the summer months. Children rarely have tinea pedis.

There are a number of organisms which may be recovered from the lesions which involve the feet. Two that are frequently encountered are Trichophyton gypseum and Trichophyton purpureum. When the offender is T. gypseum the interdigital web between the fourth and fifth toes is involved. Vesicles which soon rupture appear. This leaves a macerated soggy epithelium. Redness and itching are

generally present. The sole may also be involved. In some individuals vesicles may be found on the hands. The palms and lateral aspects of the fingers are the favorite sites. This is the result of fungi or their products entering the blood stream at the original site of the infection. These distant lesions upon the hands are known as dermatophytids. Scales examined from these lesions are devoid of fungi;

Fig. 3.—Tinea purpureum of the palm.

whereas they are usually found in material taken from the feet (the original site of infection). This is a manifestation of allergy and the trichophytin test is positive.

These dermatophytids are very often a diagnostic problem. One has to decide whether this eruption is of mycotic or non-mycotic origin. A positive trichophytin test is of little aid, because it may be the result of a fungus infection contracted years previously—analogous to a positive tuberculin test. It may be stated, and even this is not accepted by all,

Fig. 4.—Tinea purpureum of the nails.

that an inflammatory vesicular dermatitis of the hands or feet with a negative trichophytin test is non-mycotic.

The Trichophyton purpureum infection results in a non-inflammatory dermatitis and usually involves the hands and feet. The nails may also be involved in a characteristic manner. The nail is undermined; the infection is deep in the nail bed and scrapings must be made from this area when one is searching for the causative organism. This infection, just as some of those previously mentioned, produces little local or general immunity and for that reason is often extremely resistant to local therapy.

During the acute stage of tinea pedis due to Trichophyton gypseum the lesions are erythematous and vesicular. At this time only soothing applications should be used, such as boric acid compresses and boric acid (5 per cent) ointment. During the desquamative stage a modified Whitfield's ointment is used. The Trichophyton purpureum infections of the soles and palms are treated with strong keratocytic ointments. The infected nails are the most difficult to treat. As a last resort surgical avulsion may be resorted to, but the new nail may regrow with the infection.

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DISCUSSION

DR. JAMES W. ANDERSON, Norfolk: At a recent meeting in Durham, Dr. Fowlkes requested that, instead of using the usual conventional discussion of his paper, I take up in the limited time I have a discussion on therapy. So, in order to keep within bounds, I have written out the following brief outline of the therapy.

In the type of tinea capitis seen in Virginia, it is rarely necessary to depilate the scalp by either x-ray or thallium acetate, although it is a decided advantage to remove the hairs in the infected area by mechanical means, such as tweezers, epilating waxes or the crude but effective method of applying a piece of adhesive and remove it with a sudden jerk.

Clipping the scalp, daily, shampooing and the rubbing in of an antiseptic ointment over the entire scalp with energy and persistence, usually suffices to clear the infection. As has been explained by Dr. Fowlkes, the use of the Wood's filter is of a great deal of value in determining the progress of the treatment.

Local applications may be the mercurials, sulphur, dilute iodine, etc. My own preference is for an iodine-cinnamon ointment in increasing strength as the scalp becomes accustomed to it.

The use of the new wetting agents in ointment bases will probably change the picture as soon as they are worked out.

In the kerion type ringworm, with its carbuncular lesions, you are dealing with self-limited disease, which is best controlled by wet packs during the acute stage, to be followed by the ointments listed above. Copper salts and the mercurials are best used in the wet dressings, especially the copper-zinc solution known as Alibour water.

In tinea of the hairless skin the problem is usually simple. An exfoliative, antiseptic treatment is usually effective. The old sodium thiosulphate-acetic acid routine is especially valuable, especially in tinea versicolar and the usual small scaly type or lesion.

Dilute tincture or iodine, ammoniated mercury and sulphur ointments are also very effective. I wish, however, to warn you at this point never to mix iodine and mercurial, as the result is usually a violent dermatitis.

It is with the tinea infections of the feet and intertrigo spaces, such as the crotch, buttocks, axillae and breasts that we are particularly interested, as they are becoming increasingly common and present considerable therapeutic difficulties. These two type of ringworm are usually associated, the patient transferring the infection from the feet, either in the bath or with his towel, so a tinea cruris should always call for an examination of the feet.

These type are primarily hot weather diseases, their incidence increasing as the weather becomes hotter, decreasing proportionately as it becomes colder. Since the presence of heat and moisture are essential to the growth of the organism.

Based on this fact, treatment is directed along three lines: first, to keep the parts as dry as possible; second, exfoliation; and, third, antisepsis.

Unfortunately, the antiseptic factor has been placed first in the innumerable "athlete's foot" remedies, often with disastrous results.

Dryness can best be obtained in the day time by the wearing of a ventilated shoe or sandal, thin socks, and the very liberal use of common talcum powder either alone or with the addition of a small percentage of salicylic acid. Exfoliation is produced by the use in ointment or lotion form of some 6 per cent salicylic acid and the antiseptic action can be enhanced by addition to the ointment of benzoic acid, thymol, etc., as used in the ever-popular Whitfield's ointment. Care should be taken not to irritate the areas, and they should be rested at the first sign of irritation.

A good routine, where there is not too much eczemitization, is to have the patient thoroughly wash the feet with soap and water before retiring, removing all dead skin and macerated tissue, and opening all vesicles.

The prescribed ointment should then be thoroughly rubbed in and left on overnight. In the morning the feet should again be washed or the ointment wipped off, after which the feet should be liberally sprinkled with talcum and the ventilated shoes worn during the day.

Personally, I feel that the latter part of the treatment is the most important, as the best of treatment will fail if the patient continues to wear a solid shoe which keeps the feet hot and moist. I have found plain talcum to be as effective as the medicated powders offered us daily.

In the tinea cruris, treatment is directed very much along the same lines. When encountered in very hot weather, these forms are usually rather highly eczematized and should be somewhat cooled off before attempting to eradicate them.

Among the most useful drugs that I have found for this purpose is the Quinolor ointment of Squibb's, as originated by Dr. Peck for the treatment of sycosis vulgaris. It is a bit strong and is best diluted to 50 per cent with vaselin.

This to be applied at night after thorough washing, removed in the morning, and the parts covered with powder or calamine lotion. At the end of a week or ten days the use of half strength. Whitfield's or one of the various salicylic acid lotions usually completes the cure.

I have tried only to outline a simple and effective method of treating tinea, which will apply to the majority of cases. Time does not permit the mention of special treatment in stubborn cases, but, suffice it to say, when you have developed a fairly successful technique, do not be thrown off balance by the next detail man who has the last word in fungicides, for, unfortunately, the drug that will destroy the organisms in the presence of heat and moisture does not exist.

DR. FOWLKES, closing the discussion: I should like to make just one remark. Trichophyton vaccine has been used, or recommended. A group of investigators came out several years ago recommending the use of Trichophyton to help cure these cases. They admit that they were a little over-enthusiastic. Other investigators came along and found it was of very little value

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THE EYES AS PORTAL OF ENTRY FOR CERTAIN AIR-BORNE INFECTIONS*

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Roanoke, Virginia.

It is stated by Buchbinder that "respiratory infections are probably responsible for the greater part of all illness in every age group."[1]

These infections are spread chiefly in two ways. The first I shall mention, because it is by far the more common method, is by bacteria floating in the air. Droplets expelled from the nose and throat in coughing and sneezing—or even in talking—do not all fall to the ground. The theory that they do so ignores the important fact that the droplets may

*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

evaporate. Those less than 1/10 mm. in diameter may float in the air for as long as several days as they have practically the same density as the air.[2]

MacDonald,[3] in his study of the bacterial content of the air of operating rooms in a hospital, found a positive correlation between the number of persons in a given area and the bacterial count for the air.

In a study recently conducted at a large department store in New York, it was found that Streptococci were not most plentiful in the air during the rush season of November and December, but during the acute coryza season of February and March.[4]

The other manner of air-borne transmission of disease is by means of the larger droplets. Flugge[5] showed that droplets emitted in sneezing and coughing could be recovered at only relatively short distances from their point of origin, and that they described an arc downward as they descended, due to the force of gravity.

While this form of transmission is naturally less important than the type carried by air, I wish to call attention to one feature of droplet spread of infection which I feel is grossly over-looked, both by the laity and the medical profession. I refer to droplets entering the eyes. If we consider the anatomy of the face we must realize that droplets which enter the respiratory tract do so through either the mouth, the nose, or the eyes. The mouth is normally closed—the nostrils have their opening on almost a horizontal plane; so droplets would have to describe an upward arc to enter the nose. On the other hand, the eyes are on a vertical plane. They comprise a fairly large proportion of the area of the face, and there is ready passage through the lacrimal duct into the post-nasal space.

In a series of 15 rabbits which I tested, in which a drop of methylene blue was placed in the eye, the dye appeared at the nostrils in an average time of 4 minutes. This is graphically demonstrated every time we put argyrol in a patient's eye, and see him promptly expectorate the drug.

It may be argued that methylene blue and argyrol are hardly comparable to droplets of saliva in the eye, since they are somewhat irritating, are inserted in larger amounts than are droplets coughed into the eyes, and therefore stimulate lacrimation. In rebuttal, all this may be admitted; but, although the time of passage may be slower in the case of droplets, still it is undeniably the case that the lacrimal secretions normally pass from the eyes to the nose, and would naturally carry with them such infectious matter as they contained. Infections could thus be carried both to the respiratory tract and to the alimentary tract. A practitioner who wears spectacles and inspects them after a day's work will see to what extent they have protected him.

It would be interesting from an epidemiological standpoint to note whether doctors, persons riding trains and buses and soldiers in barracks who wear spectacles have a lower morbidity record of infectious diseases than those who do not wear them.

May I, in closing, sound a word of warning to those who do not wear glasses to be extraordinarily careful to protect themselves by avoiding infections by way of the eyes.

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DISCUSSION

DR. FRED E. HAMLIN, Roanoke: Dr. Graves has brought a message which should be of much interest to us all—the eye as an avenue of systemic infection. As you know, the mechanism of the eye is so arranged that it will take care of many foreign bodies and bacteria in most cases through its power of lacrimation.

Now, I am not an eye man; I do nose and throat work, and all I know about the anatomy of the eye I get from the journals. The lacrimal duct opens in the inferior meatus of the nose, 25 mm. from the vestibule; and the secretion from this duct drains down on the floor and drops upon the nasopharynx. This could be a possible source of infection, as the pharynx is said to be the most vulnerable spot to infection anywhere in the body. Jennison, of the Department of Biology and Public Health, Massachusetts Institute of Technology, has revealed by high-speed photography the secretions coming from the mouth during a sneezing attack. He claims there are about 40,000 particles shown in the picture. In sneezing, coughing, and talking, particles of secretion containing micro-organisms are expelled into the air. These droplets, in diseases of the respiratory tract, are a potential

source of infection. The larger droplets fall upon objects or on the ground and evaporate, and subsequently the residue will be carried away by the air. The smaller droplets evaporate in the air, leaving their content of microbes suspended in air. The velocity of the air past

Illustration of droplets emitted by sneezing. (Courtesy of Dr. M. W. Jennison.)

the glottis in coughing is often as high as 328 feet per second.

The secretions from the nose and throat are more viscid than water. Naturally they can be atomized less finely.

Jennison studied the various types of face masks and found that as the permeability to air decreased the permeability to droplets decreased.

In sneezing, droplets came through the fabric masks in large quantities but were made small by the force of the air current rushing them through the fibers of the mask. In coughing and talking the masks appeared to allow the passage of a few droplets. Comparisons of the permeability of new and used masks of the same type showed that laundering may increase or may decrease the permeability, depending upon the texture of the masks and upon the number of washings.

The distance to which the majority of respiratory droplets are expelled is from two to three feet. It has been demonstrated that the farther the mask is from the mouth the fewer droplets will be forced through. Apparently the droplets became dispersed over a wide area as the pressure from the megaphoned mouth is lessened.

Dr. Young, an ophthalmologist here, told me that in Vienna some years ago there were two cases of tuberculosis among physicians, following coughing by patients in their faces. Dr. Jackson, in teaching us at the University of Pennsylvania, in his bronchoscopic classes always advised the men to have on glasses, whether they have refractive errors or not. He said one should wear large plain glasses, even though one does not need them all the time, as a protection to the eyes.

DR. GRAVES, closing the discussion: I wish to thank Dr. Hamlin for discussing the paper.

We all realize that when dealing with the bronchoscope, for instance, a person will certainly cough into the physician's face; and it is taken for granted that you will cover the nose and eyes to protect yourself. The main purpose of my paper was to emphasize the casual infection that may take place and to suggest a study to determine whether those individuals who do not wear glasses are more prone to infection of the upper respiratory tract than those who do wear glasses.

TREATMENT OF BURNS*

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Burns constitute a high percentage of the injuries sustained in the present war, both in service and civilian populations. Since any burn which involves one-fourth of the cutaneous surface offers a serious threat to life, the treatment of burns presents one of the most important problems in war surgery.

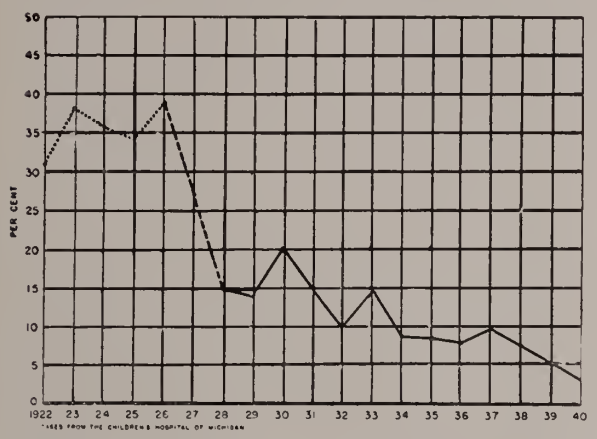
The fundamental principles involved in treating burns are fairly well agreed upon, but there is difference of opinion as to the best methods of carrying out these principles. A burn should be regarded as a surgical wound and the treatment should be fundamentally similar to that of other surgical wounds. If this attitude is adopted it will help to clarify some of the apparent conflict noted in the voluminous literature on this subject.

The most important contribution to the study of burns, and the one which has brought about the greatest reduction in mortality is the coagulation method of treatment. Since the introduction of tannic acid by Davidson in 1925, the mortality rate has shown a striking decline[1] (Fig. 1).

The treatment of burns was recently reviewed by the National Research Council, with outstanding authorities, from several fields of medicine participating. The consensus of their opinions is presented in the

*Read before the Norfolk County Medical Society in connection with the standardization of the treatment of civilian casualties in time of war.

journal, "*War Medicine*," March, 1942. In this authoritative article the tannic acid-silver nitrate method is given first choice in the treatment of all burns except those of the hands and face.[2]



Graph. 1. Mortality curve. . . . before use of tannic acid treatment; - - - experimental period; — — tannic acid and gentian violet combined with silver nitrate (10 per cent). Total cases 1,018. (Penberthy, G. C., and Weller, C. N., *Surg., Gyn. and Ob.*, 74:428-432, 1942.)

There are some disadvantages to the use of tannic acid. The aqueous solution is unstable; infection is prone to develop beneath the crust; scarring is almost certainly increased by its use; it is contraindicated in burns of the face, and when used on the fingers it may produce gangrene. On the other hand, it has certain very definite advantages. A more rapid coagulation is obtained than by other methods and this is most important in controlling shock, in preventing loss of tissue fluids, and in alleviating pain; it is simple to use, economical, and effective. It has probably had more extensive clinical application than any other form of treatment and there is no argument as to the part it has played in lowering mortality.

There are other substances which will produce coagulation of the burned surface and which are free from certain disadvantages of tannic acid. The best known of these is gentian violet. The advantage of gentian violet is that it is stable in solution and may be kept prepared as a spray ready for instant use. The crust is softer and more pliable and it may be used on the hands and face. The crust may be more easily removed and because of its antiseptic properties there is less tendency to formation of infection beneath the crust. There is less scarring than with tannic acid and less tendency to destruction of small islands of epithelial cells. Gentian violet, like tannic acid, may be used with 10 per cent silver nitrate to produce more rapid coagulation.

The recently developed triple dye method of treatment provides a satisfactory coagulation and is effective in reducing infection to a minimum. The coagulation is not as rapid as that produced by tannic acid. This preparation is a solution made up of gentian violet, brilliant green and acriflavine.[3]

Recently the sulfonamides have been used quite extensively in the treatment of burns. Good results have been reported in a limited number of cases using 3 per cent sulfadiazine in triethanolamine.[4] A thin translucent eschar is obtained, but the eschar requires several days to develop and this is a definite disadvantage. On the other hand, infection is kept to a minimum, there is little destruction of tissue, and the eschar is comparatively easy to remove.

We have experimented with a number of sulfonamide preparations in the treatment of minor burns. One of the most satisfactory of these is 5 per cent sulfathiazole in a base of aquaphor. Superficial burns, and those covering only a small area, and burns of the hands and face have healed rapidly with a minimum of infection when this preparation is used. A feature which has been noted is the relief of pain which it affords. This relief in our experience is greater than that obtained by use of any of the usual anesthetic ointments. It is not recommended in the treatment of major burns which are seen within the first twenty-four hours.

Perhaps a word should be said about cod liver oil. It has been used quite extensively in various forms, and is highly advocated by some. In minor burns of the face and hands it apparently has given good results. It has also been advocated for use on granulating areas in the later stages of treatment. The claim that cod liver oil has some special curative property has not been definitely proven or disproven. In our opinion it is not suitable for treating extensive burns which endanger life.

The following outline is based on some of the most widely accepted and recent ideas in the treatment of burns.

(1) PREVENTION AND TREATMENT OF SHOCK

This is the first consideration in all cases. Morphine should be given in sufficient quantity to relieve pain; begin with at least one-half grain in all burns of more than slight degree.

Keep the patient warm. A word of warning is indicated here. Do not apply external heat too rapidly as it may precipitate circulatory collapse. In the

presence of a decreased blood volume, the sudden opening of the peripheral vessels may be fatal.

Five hundred cubic centimeters of plasma should be administered as soon as possible. Intravenous injections of normal saline or dextrose solutions should be given sparingly, especially saline solution. Two thousand cubic centimeters of plasma may be given in the first twenty-four hours in severe burns. It has been shown that concentrated plasma is not as effective as half dilution plasma in the treatment of shock. If possible, the hematocrit should be used as a guide in the administration of plasma and fluids. One hundred cubic centimeters of plasma should be given for each point above fifty in the hematocrit reading. Whole blood is rarely indicated except where hemorrhage has occurred, and it may be actually harmful.

Adrenal cortex hormone in our opinion is secondary in importance only to plasma in the treatment of shock, and should not be omitted. The synthetic analogue desoxycorticosterone acetate may be used. If either of these drugs are administered the amount of plasma necessary to restore normal circulation is greatly decreased.

(2) LOCAL TREATMENT OF THE BURNED AREA

(a) First Aid.—In first aid stations a water soluble jelly containing 10 per cent tannic acid and 5 per cent sulfathiazole may be kept on hand. This preparation is comparatively stable. As soon as the patient is brought in the whole burned area except the hands and face is coated with this jelly. No attempt at cleansing need be made unless gross contamination is present. After applying the jelly the area is covered with sterile gauze. Usually a satisfactory tan is obtained and further local treatment may be unnecessary until the tan is removed. As an alternative to the tannic acid jelly a spray of 5 per cent gentian violet may be used.

On the hands and face a liberal coating of 5 per cent sulfathiazole in aquaphor should be applied.

(b) Hospital Care.—The burned area is practically sterile at the onset but is frequently contaminated before the patient reaches the hospital. Surgical cleansing before coagulation will prevent much of the later infection, with its accompanying pain, sepsis and scarring. The burned area is cleansed under light pentothal anesthesia, using soap and water and flushing with sterile saline. A detergent will be necessary if grease is present. All blisters should be opened aseptically and loose epidermis removed. Cleansing, of course, must be delayed until shock is controlled.

After the burned area is prepared, spray with a fresh 10 per cent solution of tannic acid. Follow immediately with a 10 per cent silver nitrate spray. Place the patient under a heat cradle and repeat this process every half hour. A good tan is usually secured within two hours. The problem of having freshly prepared tannic acid solution available may be met by keeping small packages of the powder on hand. These can readily be made up in sterile water as needed.

Five per cent gentian violet solution may be used instead of tannic acid, followed by the 10 per cent silver nitrate spray.

Burns more than twenty-four hours old should not be tanned, but should be covered with 5 per cent sulfathiazole in a water soluble base. If the area is extensive, careful check must be kept of the sulfathiazole blood level.

For burns of the hands, face and genitalia application of 5 per cent sulfathiazole in a water soluble base is indicated after careful surgical cleansing. An alternative to this is a 1 per cent gentian violet spray. Pressure bandages are advantageous to combat swelling in burns of the hands.

(3) GENERAL AND SUPPORTIVE TREATMENT

Fluid may be given freely by mouth as tolerated but solid foods should be withheld until the stomach is retentive. Glucose solutions may be given intravenously to combat dehydration or to aid in preventing hemoconcentration but rates a poor second to plasma in restoring blood volume. Adrenal cortex hormone will help in preventing edema by restoring and maintaining capillary tone. Saline solutions intravenously usually increase the edema seen in burned patients.

Since infection is responsible for many of the delayed deaths, oral sulfonamide therapy should be employed routinely. We prefer sulfathiazole, one gram every four hours, beginning as soon as the patient enters the hospital. If urinary secretion is suppressed, the blood concentration must be closely checked.

(4) LATE TREATMENT OF THE BURNED AREA

If infection develops beneath the tan it should be removed. Unless the crusts are loose, this may require light anesthesia. If considerable infection is

present after removing the crusts the surface should be carefully cleansed with saline solution and sprinkled with sulfanilamide powder. The amount of powder should not exceed fifteen to twenty grams at one time, since considerable absorption may take place. Two-tenths per cent sulfanilamide in normal saline solution may also be used as a hot wet dressing in clearing up the infection and preparing the area for skin grafting, or this may be used alternately with the dry powder. Another alternative is sulfathiazole in aquaphor, which is definitely more comfortable to the patient, but not as easy to remove when the area is ready for grafting.

If no infection is present, the tan is removed in about ten to fourteen days and skin grafting is begun. Wet dressings of Dakin's solution for a day or so beforehand will facilitate the removal of the tan. The earlier skin grafting is started, the less scarring and deformity will occur, and the prolonged period of disability which is so often seen in major burns can frequently be aborted.

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KERATITIS MARGINALIS SUPERFICIALIS—
An Acute Case*

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Superficial marginal keratitis is, fortunately, very rare, but when it does occur, as it sometimes does, in an acutely severe form, it may be disconcerting to the patient and to the ophthalmologist. This condition usually appears as a slow, progressive, chronic process, with a tendency to relapse, and may last over a period of several years. Having its inception at the limbus and involving the superficial layers, it advances toward the corneal center but apparently does not reach it. The following case proved to be one with rapid changes and intense injection with all the discomfort expected with extensive denudation of the corneal epithelium.

Miss M. J. W., white, clerk, about fifty-five years of age, came to see me on August 15, 1941, complaining about her left eye being very uncomfortable. There was a marked congestion involving the palpebral, the fornical and the adjacent bulbar conjunctiva with a slight amount of translucent jelly-like exudate. The next day the right eye was affected in the same manner. A simple zinc lotion was ordered, to which there was prompt response, but several days later there appeared in the cornea of each eye at the limbus minute areas of superficial involvement with ciliary injection. From this time on for five weeks, with several remissions, there appeared at twenty-four hour intervals, crops of opaque, finger-like projections, about one mm. wide, of sloughed-off epithelium and Bowman's membrane, radiating from the limbus toward the corneal center, and where they were very close, a coalescense would result, followed later by new blood vessel formations projecting into the cornea at the involved areas. Before being arrested the process continued until it had involved the left cornea from about four o'clock around to about one o'clock for a width of about three mm., and the right one from about seven o'clock around to two o'clock. There was an intense combined ciliary and episcleral congestion, extreme photophobia, excessive lachrymation and the sensation of grit in the eyes.

Complications which appeared were a mild iritis in both eyes; minute node-like infiltrations in the substantia propia of the right eye, extending from about ten o'clock around to about one o'clock, made their appearance at the beginning of the fourth week; hay-fever, to which she was subject, affected her beginning with the second week; and various local hypersusceptibilities, of which I will speak later, manifested themselves during the course of treatment.

Her history was negative, except that she had had mild attacks of sinus infection and was subject to hay-fever. An X-ray examination of her teeth revealed three with possible root infection, and removal was advised. A thorough examination by

*Read before the Richmond Eye, Ear, Nose and Throat Society, April 13, 1942. There have been slight addenda since.

Dr. Manfred Call, III, showed a slight lowering of the hemoglobin.

Simple treatment was of no avail. Applications of the commonly employed cauterizing agents such as tincture of iodine, phenol and silver nitrate (which was used with some hesitancy) resulted in immediate penetration into the proper substance of the cornea in each instance, followed by prompt regeneration of this layer later, after each was discontinued. Smears showed no bacteria. A course internally and locally of sulfathiazole had no effect. Because of idiosyncrasies, nupercaine, pontocaine, boric acid solution and one per mercurochrome solution could not be used in the eyes. Supportive treatment in the form of a multiple vitamin compound was given early, but was discontinued later. Dr. Call prescribed to combat the hemoglobin deficiency. There is little information in the literature as to this condition and the routine developed which had an immediate and continued favorable influence consisted of irrigations with half-normal saline solution, applications of U. S. P. ethyl alcohol to the denuded areas under local anaesthesia, flushing the eye with sterile water directly afterwards, the use of White's ointment, and later, dionin. Hot fomentations and atropine which had been used were continued. Phenobarbital was sufficiently effective to combat the insomnia resulting from the ocular discomfort. Constitutional treatment was in the form of plain Haliver oil, which was very satisfactory. This method of treatment was instituted during the latter part of the fourth week and marked improvement was noted within two days, and continued until complete healing had occurred on October 15, 1941. During the fifth week (September 17) injections of O. T., to which there was only a slight reaction, were started, and continued, because of their foreign protein effect, until recovery.

While this case and the literature (Fuchs) tend to confirm that there may be a limitation as to the extension of this process toward the corneal center, that portion of the path of involvement affected in the two eyes indicates that the entire corneal area adjacent to the limbus could become a prey to this condition. Had it done so in this instance before being arrested, it would have prolonged the duration much beyond the three months required.

I am unable to find support from this case or from the literature for an assumption that this is a self-limited process of from eight to ten weeks' duration. Nor is there occasion to confuse this condition with keratitis marginalis profunda, in which there is rarely a break in the corneal surface, and still less so with kerato-conjunctivitis sicca, in which the ocular manifestations consist of conjunctival hyperaemia, reduced lachrymation, hypertrophy of the corneal epithelium, a sense of itching or burning, photophobia, and reduced visual acuity.

This condition was probably neuropathic in origin with an allergic influence. Visual acuity remained unimpaired and the slightly nebulous state resulting was hardly noticeable.

200 East Franklin Street.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This white patient, age 19, was delivered of her second child in her home after a normal pregnancy. She lived in the country. Labor was said to be uncomplicated. One cc. of pituitrin was given hypodermically after delivery and one ergotrate tablet was given by mouth. The ergotrate was repeated a short time afterwards. Fifteen minutes after delivery the uterus was said to be well contracted and the physician left the house. After this time, bleeding was noticed and the physician called. He arrived two hours later to find the patient nearly pulseless, and having passed large clots from the uterus. She died in an ambulance on the way to a hospital.

COMMENT

This is classified as a preventable obstetrical death and charged to error on the part of the physician, who left the patient unattended in her home fifteen minutes after the end of the third stage of labor. This is considered a rather typical case of postpartum hemorrhage and illustrates the ever pres-

ent danger of excessive bleeding after delivery. The committee agreed that the conventional hour of post-partum observation would most likely have given the physician an opportunity to save the patient. Deaths from hemorrhage are not unusual. During the past year the number of maternal fatalities from this cause have exceeded those from any other one cause in Virginia. Much progress has been made in reducing the mortality rate in toxemia. It is obvious that if our maternal death rate is to be further reduced it is necessary that hemorrhage be given study and receive more attention.

MENTAL HYGIENE ACTIVITIES

Study and Research in State Hospitals

For some time the State Hospital Board has been considering the matter of offering awards to hospital physicians for original or meritorious papers based upon observation of patients under their care.

The Board, with the approval of the Governor, has arranged to make available the sum of $500 each year for these awards; $250 for the first award, $150 for the second, $75 for the third, and $25 for an honorarium to some out-of-state authority who would pass on the relative merit of the papers.

Dr. J. Shelton Horsley first made the proposal to the Board and the Governor, and their enthusiastic approval was quickly given. Dr. R. Finley Gayle, Jr., and Dr. R. A. Morison, the other two physician members of the State Hospital Board, are serving on the committee with Dr. Horsley to work out proper rules and procedure to govern the conduct of the competition among the physicians.

Those physicians who are on leave of absence who are serving in the armed forces will be eligible to compete and it is hoped that most of them will participate.

The resolution adopted by the State Hospital Board on January 14, 1943, is as follows:

RESOLVED, that in order to stimulate interest in professional work among the physicians on the staffs of the State Hospitals, exclusive of the Superintendents, prizes will be given each year for original or meritorious papers, based preferably upon observations of patients under the doctors' care. The papers might concern either one unusual case or a group of cases. The diseases that are discussed may be common or ordinary diseases in which careful study of the cases will bring out some new points. The papers need not necessarily deal entirely with new clinical or laboratory features. These features or observations, however, may be reclassified and deductions drawn from them that have not heretofore been made.

The papers should be handed in to the Commissioner, Dr. Henry, by the first of June of each year and the award made by the first of October. This would give time for carefully examining the papers. It should be understood that this is an annual award so that any aspirant for the prize could carry on his work for a year or two with the expectation of having his essay considered sometime later. Not infrequently a series of observations must extend over a period of time.

The general rules governing this competition should be made out and a letter describing these general rules and the object of the competition should be mailed to every doctor connected with the State Hospitals. We do not believe the committee itself should have anything to do with the awards except to institute the technic by which they are given.

The sum of $500.00 is available each year for these prizes,—$250.00 for the first prize, $150.00 for the second, and $75.00 for the third prize. There should be $25.00 for an honorarium for some out-of-State authority who passes upon these papers. If no paper appears worthy of a prize, the money can accumulate until some succeeding year in which a worthy paper has been turned in.

Public Health Statistics

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for December, 1942, compared with the same month in 1941, and for the period of January through December, 1942, compared with the same period in 1941, follows:

	Dec. 1942	Dec. 1941	Jan.-Dec. 1942	Jan.-Dec. 1941
Typhoid and Paratyphoid	10	28	248	343
Diarrhea and Dysentery	55	78	4,526	5,580
Measles	59	484	4,932	35,600
Scarlet Fever	185	248	1,641	1,715
Diphtheria	67	116	695	754
Poliomyelitis	2	8	44	155
Meningitis	34	4	187	100
Undulant Fever	2	1	34	16
Rocky Mountain Spotted Fever	0	1	47	33
Tularemia	8	14	42	41

PLASMA RESERVES

It is of interest to the medical profession to know that the Office of Civilian Defense has made its reserves of plasma available for civilian use in all disasters, whether they are related to or resulting from enemy action. At the present time something over 50,000 units of prepared plasma are available, and it is expected to reach the full quota of 130,330 units in the near future.

The Office of Civilian Defense plasma reserves are of three types: liquid, dried and frozen. Liquid reserves are maintained in 150 hospitals which have received grants of Federal funds. Frozen plasma has been obtained through the Army and Navy from blood collected by the Red Cross in excess of immediate service requirements. Dried plasma is stored in centrally located Office of Civilian Defense depots. It can be transported long distances without special storage or handling, and can be moved by air to any stricken community in danger of exhausting its local supply.

Civilian reserves of blood plasma large enough to meet the requirements of more than 30 disasters as great as the recent Boston night club fire have been established at strategic locations throughout the country and are being added to constantly under the joint program of the Public Health Service and the Office of Civilian Defense.

Most of the plasma reserves are concentrated in the areas where enemy air raids are deemed most probable. Sizeable deposits are maintained also in inland regions for protection of communities in case of any major emergency in those areas.

The value of the Office of Civilian Defense plasma program was demonstrated in Boston at the time of the night club fire. In spite of the unprecedented demand for plasma, there was on hand in the city at the time of the fire almost twice as many units as were required for treatment of victims of that major disaster.

In Boston at the time of the fire were 500 units of dried plasma at the Office of Civilian Defense Regional Office, 1,000 units of frozen plasma in two hospital reserve depots, 200 units of Red Cross dried plasma, and 1,308 liquid and frozen plasma units at hospitals participating in the Office of Civilian Defense—U. S. Public Health Service plasma program, making a total of 3,008 units available at once.

Of this amount, about 1,500 units were used. More than 75 per cent of those hospitalized as the result of the fire required administration of some plasma and the Superintendent of the Boston City Hospital estimated that it saved the lives of at least 75 persons who were treated there.

Miscellaneous

A Doctor's Plea In Wartime

The doctor's life, in times like these,
Is not exactly one of ease.

For, on the home front, each M. D.
Is busier than any bee!

He's shouldering the burden for
The other docs, who've gone to war.

This leaves your doctor precious little
Time to sit around and whittle.

And indicates the reason why
You ought to help the poor old guy.

How?

1. By keeping yourselves in the best of condition.
   Thus avoiding the ills that demand a physican.
2. By phoning him promptly when illness gives warning,
   But—unless very serious—waiting till morning.
3. By cheerfully taking whatever appointment
   He makes for prescribing his pills or his ointment.
4. By calling on him where he works or resides
   Instead of insisting he rush to your sides.
   (Of course, he'll come 'round when there's need for his service
   But spare him the trip when you're nothing but nervous.)
5. And, last but not least, you can help in this crisis
   By carefully following doctor's advices.

If these commandments you'll adhere to
A doctor's heart you will be dear to!

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Editorials

The Excretion of Nicotine in Breast Milk and Urine from Cigarette Smoking: Its Effect on Lactation and the Nursling.

PERLMAN, Dannenberg and Sokoloff raise a very timely question in the November 28, 1942, issue of the J. A. M. A. In the past ten years the consumption of cigarettes in the United States has increased from 113,500,000,000 to 189,769,000,000. This increase is thought to be due largely to women smokers. Whether cigarette smoking by pregnant and parturient women is harmful cannot be answered definitely from any scientific evidence available. Schoenbeck has shown that pregnant rabbits exposed to the smoke of one cigarette a day had litters that had a birth weight approximately 17 per cent less than those of the control litters. The stillbirth rate was ten times as great and the mortality rate definitely increased, since only one-third as many off-spring of mothers exposed to smoke were alive at maturity.

Clinical studies of the effect of cigarette smoking on parturient women have led to conflicting opinions. Thompson, from a review of the literature and from personal observation (Thompson, W. B., Am. J. Obst. & Gyn. 26:662, 1933), was of the opinion that smoking in moderation had little effect upon lactation. If, however, the patient smoked eight or more cigarettes a day, lactation was inadequate three months after delivery. Mgalobeli (Monatschr. f. Geburtsh. u. Gynak. 88:237, 1931) noted that women employed in tobacco factories not only had fewer pregnancies, but also that their pregnancies more frequently terminated in miscarriages and infant deaths, all of which he attributed to the influence of nicotine on the sex organs. Chiasson (J. A. M. A. 93:1909, 1929) on the other hand found exceptional fertility and lactation in a group of French women who were habitual pipe smokers. Williamson and others of the obstetrical department of Cornell have never observed any diminution in

the secretion of milk or any effect on a child which could be attributed to the smoking of cigarettes by the mother. Emanuel (Ztschr. f. Kinderh. 52:41, 1931) has shown that nicotine passes in slight amounts into the milk and in larger amounts into the urine four or five hours after smoking It may appear as early as one or two hours and may persist as long as seven or eight after smoking. With the possible exception of two cases, no changes were observed in the infants following the ingestion of nicotine-containing milk. Emanuel was of the opinion that five or six cigarettes might be safely allowed the nursing mother, but that more than fifteen cigarettes a day might be harmful to the infant.

Perlman and his co-workers studied fifty-five white mothers who were addicted to smoking. As a test animal they used Daphnia magna, a transparent fresh water crustacean. These animals vary in their sensitivity to nicotine according to age and sex. Ten-day old females were used. They were grown in a weak infusion (0.75 to 0.1 per cent) of cow manure so that they would have more pigment and therefore be more readily visible in milk. Visibility in the milk was further increased by removing the fat. By comparing the time at which paralysis sets in in a given specimen and in a solution of nicotine of a known strength, the amount of nicotine in the specimen can be determined.

The mothers were divided into groups according to the number of cigarettes smoked over a twelve hour period. Group A smoked from 1 to 4, group B from 5 to 10, and group C 11 or more. In group A the average concentration of nicotine was 0.116 mg. per liter in the morning specimens and 0.16 in the afternoon specimens. In group B the average concentration of nicotine in the morning milk was 0.225 and in the afternoon milk 0.278 mg. per liter. In group C the morning milk contained 0.445 mg. per liter and the afternoon specimens averaged 0.5 mg. per liter. In each group the amount of nicotine in the urine was more than ten times greater than in the milk. Nicotine was detected in the milk and urine of every woman who smoked. There was a definite correlation between the amount of nicotine and the number of cigarettes smoked. However, the nurslings were apparently unaffected by the amount of nicotine they ingested with the milk.

The question is still unanswered. The only thing that can be stated positively is that cigarette smoking is followed by the excretion of nicotine in the milk. Whether this is harmful to the baby cannot be answered now. Another aspect of cigarette smoking is the effect on pregnancy itself. That nicotine can be found so constantly in the breast milk and in the urine is good evidence that it is widely distributed in the body. Does it cause abortions? One is impressed by the number of inevitable abortions now-a-days, and abortions in women who are anxious for children. Is this increase, which has occurred since cigarette smoking by women has become so prevalent, real or only apparent? It is undoubtedly true that we see our patients earlier in pregnancy than ever before. It is quite possible that many of these early abortions would have gone unrecognized had they not been under medical supervision. Furthermore, more women are being treated for sterility than ever before, and consequently more women of low fertility conceive than formerly. This, however, could account for only a few of the threatened and inevitable abortions we see. Is cigarette smoking a factor? The answer of this comparatively new question becomes more important because of the war.

Wanted: A White Collar John Henry or Paul Bunyan

IT used to be considered good form to answer the letters one received, certainly within two weeks. Furthermore, the courteous thing to do was to answer in the same form. A typewritten letter required a typewritten reply, and a holographic letter called for one written by hand. We remember the late Dr. Blackwell complaining about the late President Taft writing to him with pen and ink and that he had become so spoiled by a good secretary that he hated to write a pen and ink reply. It was the only time we ever heard Dr. Blackwell complain, and we rather think his real complaint was that we had replied to one of his letters with a postal card.

Such a code worked no hardship in the days when one wrote only to one's acquaintances, when there were no mimeograph machines, no questionnaires and no "sucker lists". Now the majority of your mail is from someone you have never heard of and about something of which you neither know nor care. The temptation to use the wastebasket often gets the best of your courtesy. Why has not some storywriter invented a White Collar John Henry or Paul Bunyan? It seems they have missed a wonderful opportunity.

According to Ruark Bradford, John Henry was born in the "Black River country where the sun don't never shine". He died trying to "roll cotton" faster than a steam winch. A more scholarly study of the John Henry saga (Johnson, Guy Benton, John Henry, tracking down a negro legend. The University of North Carolina Press, 1929) places his birth place in Virginia. He was a steel-driving man and died competing with a steam drill. Paul Bunyan, on the other hand, was born on the Bay of Fundy, and when he turned over in his log cradle, he started the famous tidal waves of that region. The Grand Canyon was made by his dragging his heavy peavy along as he went to the Pacific coast. When he became disgusted with the new-fangled logging methods, he retired with his fore-and-aft moose terrier, Elmer, to the wildest country he could find. Men say he can never die until the last tree is cut down.

It matters not where our swivel-chair hero is born, but after he has had his fling at competing with new-fashioned office machinery, he should be retired to some insane asylum whence from time to time he can send forth sane and whimsical observations on the cockeyed world we live in and where the people use alphabetical abbreviations instead of words, and where numbers no longer mean a thing.

Howard Atwood Kelly, B.A., M.D., LL.D., F.A.C.S.
1858-1943

IN the death of Dr. Howard A. Kelly on January 12th the medical profession lost one of its brightest minds. He was the youngest and for the past few years the only survivor of the "Big Four" of Sargeant's great painting. It is said that his coming to Johns Hopkins was due to Osler who told Billings that there was a young surgeon at Kensington Hospital whose work he should watch. The other members of the "Big Four" were selected for various reasons. Welch, who was trained in the best-known German laboratories, came as the very embodiment of German medicine. Osler was trained in British methods with a certain amount of German and French influence. Halstead came as a brilliant New York surgeon. Kelly was more of a local product and had only his work to recommend him.

The others taught well established subjects. Kelly had to develop his. When he came to Johns Hopkins, Gynecology, if it were taught at all, was combined with other subjects such as Medical Jurisprudence and Hygiene. A favorite title was Professor

of Surgical Diseases of Women, of Gynecology and Abdominal Surgery, or of Women and Operative Midwifery. Dr. William Travis Howard was Professor of Diseases of Women and Children at the University of Maryland when Dr. Kelly came to Hopkins as Professor of Obstetrics and Gynecology. Two years later Whitridge Williams took over Obstetrics and Kelly became Professor of Gynecology.

The early days, when Gynecology was finding itself, were anything but harmonious. The echoes of the battles that the founders, Marion, Emmet, and Joe Price, waged among themselves come down to us even now. Kelly held his own in these contests and yet kept on good terms with each. It is hard to realize that in one lifetime so much has been accomplished. Some years ago at the dinner given in honor of Dr. Kelly on his seventy-fifth birthday, Dr. Chipman told of Kelly's first visit to Edinburgh. Chipman was an interne at the time, and Kelly performed an hysterectomy. The operation had never been done in Edinburgh before and Chipman spent most of the night before washing sea-sponges and threading needles in preparation for the great event. There were, of course, no rubber gloves, nor any attempt at asepsis, for all that lay in the future. During his lifetime national gynecological societies were organized in all countries and he was either an active, corresponding or honorary Fellow of all. When the Medical Library was in the Johns Hopkins Hospital, before it was moved to the Welch Building, the certificates of his membership in these societies used to decorate the walls of the back room.

Although Kelly helped to make a specialty, his activities were by no means confined to that specialty. He was a pioneer in the use of radium and was instrumental in starting the first school of Medical Illustration. Max Brödel was brought to Baltimore to illustrate Kelly's Operative Gynecology. He remained to continue his medical illustrating, to do investigation in Anatomy and finally to start the first course in Medical Illustration.

Kelly loved flowers, and in his student days made a worthwhile collection of native Pennsylvania ferns. He wrote a delightful book upon early American botanists commemorated in botanical nomenclature. His interest in snakes is well known and gave rise to many stories about venomous reptiles inhabiting his bookshelves. He was Honorary Curator of the Division of Reptiles and Amphibians of the University of Michigan. Being an avid book collector, he had an especially fine collection of Florence Nightingale items. Anyone writing a book on women in medicine, missionary medicine, or anything pertaining to the history of medicine, could count on him for an introduction.

Besides his Operative Gynecology, he was the author of The Vermiform Appendix and its Diseases (with Elizabeth Hurdon), 1905; Walter Reed and Yellow Fever, 1906-07, 23; Gynecology and Abdominal Surgery (edited with C. P. Noble), Vol. I, 1907, Vol. II, 1908; The Stereo-Clinic, 84 sections, 1908; Medical Gynecology, 1908 and 1912; Appendix and Other Diseases of the Vermiform Appendix, 1909; Myomata of the Uterus (with T. S. Cullen), 1909; Cyclopedia of American Medical Biography (2 volumes), 1912; Some American Medical Botanists, 1913; Diseases of the Kidneys, Ureters and Bladder (with C. F. Burnam—2 vols.), 1914, 1922; American Medical Biographies (with W. L. Burrage), 1920; A Scientific Man and the Bible, 1925; Gynecology, 1928; Dictionary of American Medical Biography (with W. L. Burrage), 1928; Electrosurgery (with Grant E. Ward), 1932; also some five hundred scientific articles.

Along with all this, he took his religion seriously, and was quite as well known for his Sunday School talks in various parts of the country as he was in medical circles.

Societies

The Southampton County Medical Association

Met at the Raiford Hospital, Franklin, on December 15th, under the presidency of Dr. Morgan B. Raiford. The following scientific program was presented: Ulcer of Stomach by Dr. Wright Clarkson, Petersburg; Medical Preparedness by Dr. Julian Rawls, Norfolk; and a motion picture on Ulcer of the Stomach prepared by John Wyeth & Brother.

It was proposed by the members that a permanent exhibit of the history of medicine be gathered for Southampton County with books and equipment used by physicians of the past years. Each member was asked to contribute to the work by being responsible for community's medical history. Between the scientific and business sessions, dinner was served at the Raiford Hospital.

Dr. W. T. McLemore, Courtland, is secretary of this association. The next meeting will be held in April.

Albemarle County Medical Society.

At the annual meeting of this Society, the following officers were elected for the coming year: President, Dr. David C. Wilson; vice-president, Dr. Samuel A. Vest; and secretary-treasurer, Dr. M. K. Humphries, Jr.

The Northampton County Medical Society

Held its regular quarterly meeting at Eastville on January the 14th, at which time the speaker of the evening was Dr. Donald T. Imrie of the Crippled Children's Hospital of Richmond. His subject was "Recent Trends and Current Attitudes in Orthopedics" and was of especial interest to general practitioners.

Election of officers resulted as follows: President, Dr. W. T. Green of Nassawadox; vice-president, Dr. J. M. Lynch of Cape Charles; and secretary, Dr. W. Carey Henderson (re-elected) of Nassawadox. Dr. J. W. Jackson of Machipongo was elected to the Board of Censors for a term of three years, and Dr. W. J. Sturgis of Nassawadox was elected to succeed himself as trustee from the Society to the Board of the Northampton-Accomack Memorial Hospital.

W. CAREY HENDERSON,
Secretary.

Patrick-Henry Medical Society.

At the annual meeting of this Society, Dr. W. N. Thompson of Stuart was elected president for the year 1943 and Dr. H. G. Hammond of Martinsville was elected secretary-treasurer.

The Tazewell County Medical Society

Held its regular January meeting on the 14th, at North Tazewell. At this time Dr. W. R. Counts of Bishop was elected to membership in the Society.

Dr. E. M. Fusco of Grundy read a most interesting paper on "The Kenny Method of Treating Infantile Paralysis", and showed in conjunction with his paper a short movie film he had taken on his trip to Minneapolis where he observed Sister Kenny's methods in use. Dr. J. A. Robinson, Richlands, Virginia, presented a series of x-ray films and discussed them. This was followed by a general discussion of both papers.

MARY E. JOHNSTON, *Secretary.*

Richmond Academy of Medicine.

At the regular meeting of the Academy on January the 26th, with the president, Dr. A. S. Brinkley, presiding, the following program was presented:

Three Gallbladders—Dr. W. Lowndes Peple
Discussor—Dr. Frank Johns
Rheumatic Fever: Preventive and Public Health Aspects—Dr. Louise Fry Galvin
Discussors—Dr. Paul Camp and Dr. E. C. Harper

News

Our Men Need Books.

The 1943 Victory Book Campaign has been undertaken at the request of the armed forces and has been approved by the Office of War Information. It is sponsored by the American Library Association, the American Red Cross and the U.S.O. Good books—popular and technical—are wanted for men in all branches of the service, for the education and

enjoyment of the soldiers, sailors and marines. Each reader is asked to leave such books as he can give at his nearest collection center or public library.

The Virginia Neuro-Psychiatric Society

Will hold its winter meeting in the Richmond Academy of Medicine Building, Richmond, on February the 16th at 2:00 p.m., at which time the following program is to be presented:

Guillien-Barre Syndrome in a Child, Report of a Case—Dr. R. Finley Gayle, Richmond.

Preliminary Report of 200 Autopsy Cases at the Eastern State Hospital, with Special Emphasis on Neuro-Pathology and Brain Tumor in Old Age—Dr. I. S. Zfass, Williamsburg, and Dr. W. Riese, Medical College of Virginia.

Os Occupational Therapy—Dr. J. K. Hall, Richmond.

Fear Emotion and Its Home Front Reaction—Dr. Beverley R. Tucker, Richmond.

Dr. Howard R. Masters, Richmond, is president, and Dr. Joseph R. Blalock, Marion, secretary.

Tri-State Association Will Not Have A 1943 Meeting.

Upon vote by officers of the Tri-State Association of the Carolinas and Virginia, it has been decided that this organization will not have a meeting this year in February as has been its custom for many years. It is confidently believed, however, that the members will come together with renewed zest when the Association votes to resume its sessions.

An Omission.

By inadvertence, the name of Dr. C. C. Haskell of Richmond was omitted from the review on "The Critical Antimalarial Problem and Its Solution", which appeared in the January MONTHLY, page 52. The editor is not loath to claim credit for this article but believes the readers would rather know this condensation was prepared by an authority.

Dr. Eugene M. Landis,

Head of the Department of Internal Medicine of the University of Virginia, has resigned to accept a place on the medical faculty at Harvard University. He will become George Higginson Professor of Physiology and will enter upon his duties on July 1st. Dr. Landis came to the University in the fall of 1939.

Dr. Welchons Resigns.

Dr. George A. Welchons, superintendent of Pine Camp Sanatorium, Richmond, is resigning that position to enter private practice about March 1st.

Examination Dates Changed.

Owing to the fact that the medical schools in Virginia and many other states have advanced their graduation dates on account of the exigencies of war, the next examinations by the Virginia State Board of Medical Examiners will be held in Richmond, March 24-27, instead of in June as heretofore. All applications must be complete in the hands of the secretary, Dr. J. W. Preston, Roanoke, at least ten days in advance of examinations.

Dr. Joseph E. Cox,

Who formerly practiced pediatrics in Waynesboro and Staunton, was promoted to the rank of Lieutenant Colonel in the Medical Corps of the Army on December the 31st, and is now in command of the 43rd Station Hospital at Camp Blanding, Florida.

Married.

Dr. Charles James Frankel, University, and Miss Gladys Louise Birmingham, Buena Vista, January 8th. Dr. Frankel is assistant professor of orthopedics at the University Hospital.

Dr. Carey Addison Stone, Jr., Crewe, and Miss Cornelia Daniel Preston, Lewisburg, W. Va., January 7th. Dr. Stone is now a Lieutenant in the Medical Corps, U. S. Army Air Force and is stationed at Hunter Field, Savannah, Georgia.

Dr. Clara Joel, Richmond, and Corporal Edward Fleisher, Bethlehem, Pa., January 5th. Dr. Joel graduated from the Medical College of Virginia, class of 1942.

Dr. William T. Sanger,

President of the Medical College of Virginia, was recently elected president of the Richmond Chapter of the Virginia Cancer Foundation. Dr. Reuben F. Simms was named a new member of the Board of Trustees.

Richmond City Coroner.

Dr. J. Hamilton Scherer, city coroner since October 1936, has resigned and Dr. R. Manton Wilson, former city epidemiologist, and since last September head of the new medical aid division of the City Health Department, has been appointed to the post. Dr. B. Black-Schaffer of the Medical College of Virginia has been appointed assistant coroner.

Annual Spring Graduate Course.

The Gill Memorial Eye, Ear and Throat Hospital, Roanoke, will hold its seventeenth annual spring graduate course, April 5th to 10th. Members of the faculty will be: Drs. C. H. Best, Toronto, Canada; A. L. Brown, Cincinnati; Ramon Castroviejo, New York; Albert A. Cinelli, New York; Bruce Fralick, Ann Arbor; Perry Goldsmith, Toronto, Canada; George P. Guibor, Chicago; French K. Hansel, St. Louis; Willis S. Knighton, New York; Peter C. Kronfeld, Chicago; John R. Lindsay, Chicago; John M. McLean, New York; Robert J. Masters, Indianapolis; John R. Richardson, Boston; Theo. E. Walsh, St. Louis; and Rear Admiral Luther Sheldon, Jr., Washington, D. C. Resident members are Drs. E. G. Gill and James H. Gressette.

Medical College of Virginia News.

Dr. Eugene Kellersberger, General Secretary of the American Mission to Lepers of New York, spoke to the senior students in the school of medicine, and to the monthly faculty and staff meeting, on January 14.

Dr. Jacques P. Gray, dean of the school of medicine, spoke to the membership of the Southside Community Hospital, Farmville, on January 20.

Dr. William T. Sanger, president, spoke on the "Foods for Victory School" program, sponsored by the Office of Civilian Defense, in Norfolk, on January 20.

Dr. Randolph H. Hoge, assistant professor of surgery, has been elected a fellow of the American College of Surgeons.

Dr. J. H. Weatherby, research associate in pharmacology, has been commissioned a lieutenant (Senior Grade) in the navy and ordered to Pensacola, Florida, for active duty.

The W. K. Kellogg Foundation of Battle Creek, Michigan, has made an additional grant of $5,000 for student loans in the school of medicine.

Dr. Rolland J. Main, professor of physiology, recently spoke to the Richmond Dietetic Association on "Recent Advances in Endrocrinology".

Dr. Fred J. Wampler, professor of preventive and industrial medicine, attended the Congress on Industrial Health in Chicago, January 11-13.

It is expected that the Honorable Colgate W. Darden, Jr., Governor of Virginia, will make the Commencement address on the night of March 20.

Dr. W. T. Sanger, president, and Miss Louise Grant, dean of the school of nursing, attended a conference on pre-medical and pre-nursing studies at the College of William and Mary on January 15.

Dr. Jacques P. Gray, dean of the school of medicine, and Dr. W. T. Sanger, president, will attend the Congress on Medical Education and Hospitals, Chicago, the middle of February.

Dr. Lewis E. Jarrett, director of the hospital division, will attend a meeting of the board of trustees of the American Hospital Association in Chicago, February 8-14.

Dr. Philip D. Wilson, orthopedic surgeon of New York City, will deliver the annual Stuart McGuire Lectures of the College on February 25 and 26.

News From University of Virginia, Department of Medicine.

At the meeting of the Southern Medical Association in Richmond, Virginia, on November 13, Dr. D. C. Smith was elected Chairman of Section in Dermatology and Syphilology.

On Wednesday, January 6, 1943, The Winthrop Chemical Company of New York City and Windsor, Ontario, showed motion pictures on "The Treatment of Malaria with Atabrine", and "Regional Anesthesia" in the amphitheater.

On Friday, January 8, 1943, Dr. W. H. Brown, Dean of School of Public Health, University of North Carolina, gave two lectures—one on "Malaria" and the other on "Parasitic Infections". These lectures were under the auspices of "The National Research Council", and were given in the amphitheater.

Dr. Charles P. Ryland

Of Washington, D. C., is now serving in the U. S. Navy with the rank of Lieutenant Commander and is located at the Navy Yard in Washington. He is a graduate of the medical College of Virginia, class of '29.

Captain Micajah Boland, MC., USN.,

Is now on active duty at the Receiving Station, Norfolk.

Dr. Paul Camp

Spoke before the Richmond Dental Society at its meeting in January, his subject being "Certain Cardiac Emergencies and Their Relation to Dental Practice".

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Chadwick, M.—The psychological effects of menstruation.

Corner, G. W.—The hormones and human reproduction.

Ford, E. B.—Genetics for medical students.

Fry, C. C.—Mental health in college.

Hitschmann, E. & Bergler, E.—Frigidity in women.

Jellinek, E. M.—Alcohol addiction and chronic alcoholism.

Leonardo, R. A.—American surgeon abroad.

Levine, M.—Psychotherapy in medical practice.

Mackintosh, J. M., ed.—War and the doctor.

Quick, A. J.—The hemorrhagic diseases and the physiology of hemostasis.

Smart, J.—Lice.

Wallace, A. B.—The treatment of burns.

Weiss & English—Psychosomatic medicine.

Obituaries

Dr. Don Preston Peters,

Prominent surgeon of Lynchburg, died January 20th. He was sixty-five years of age and graduated in medicine from the University of Virginia in 1902. Dr. Peters practiced in Baltimore before locating in Lynchburg in 1919. He was considered an authority on Confederate history and was the owner of one of the world's finest collections of Confederate stamps. His wife and several children, one of whom is Dr. Don Preston Peters, Jr., survive him.

Dr. Henry Sycle Stern,

Well known pediatrician of Richmond, died at his home on December 24, several hours after a heart attack. Dr. Stern was born in this city nearly forty-nine years ago and received his medical education at the Medical College of Virginia, from which he graduated in 1914. He was a member of his local, state and national medical associations, the Richmond Pediatric Society and a fellow of the American Academy of Pediatrics and was associate professor of pediatrics at his alma mater. Dr. Stern served in World War I, being attached to Evacuation Hospital 18. He is survived by his wife and two children.

Dr. Robert Minor Wiley,

Salem, died January 5th. He was seventy-two years of age and a graduate of the Medical College of Virginia in 1895. Dr. Wiley had been a member of the Medical Society of Virginia for forty-seven years. His wife and three daughters survive him.

Dr. William Leslie Davenport,

Retired physician of Amelia, died December 22, after a brief illness. He was a native of Kentucky and 82 years of age. He graduated from the College of Physicians and Surgeons of Baltimore in 1893 and practiced for twenty-three years in Washington County before locating in Amelia. He had been a member of the Medical Society of Virginia for a number of years. His wife and several children survive him.

Dr. George Washington Crile,

Internationally known surgeon of Cleveland, died January 7th, at the age of seventy-eight. He was the discoverer of adrenalin and was believed to be the first person to make a direct blood transfusion. Dr. Crile was the first to operate locally for goiter and, in 1920, reported that he had eliminated surgical shock by administering nitrous oxide. He had spent more than fifty years in medical and scientific research and is credited with numerous other discoveries.

Mrs. Grace Wilkins Holland,

Wife of Dr. Griffin W. Holland, died suddenly at her home in Eastville, December 26. She was president of the Woman's Auxiliary to the Medical Society of Virginia for the year 1940-41.

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Some recommend that every child be given a Dick test on entrance to school or an institution, and that a record be kept of the result[5]. Dick-testing and immunization of susceptible individuals is indicated[6] in emergencies such as threat of an epidemic. It is atimely procedure for the large numbers of children who are being moved, in many parts of the country, into over-crowded war-plant areas.

[1]KOJIS, F. G.: Am. J. Dis. Child. 64:93 (July), 1942; 64:143 (Aug.) 1942.
[2]TOP, F. H., and YOUNG, D. C.: J.A.M.A. 117:2056 (Dec. 13) 1941.
[3]PALMER, L.: Kentucky M. J. 40:254 (July) 1942.
[4]MELNICK, T.: Arch. Pediat. 59:90 (Feb.) 1942.
[5]HOYNE, A. L.: Illinois M. J. 81:12 (Jan.) 1942.
[6]THOMPSON, C. G.: Connecticut M. J. 5:736 (Oct.) 1941.

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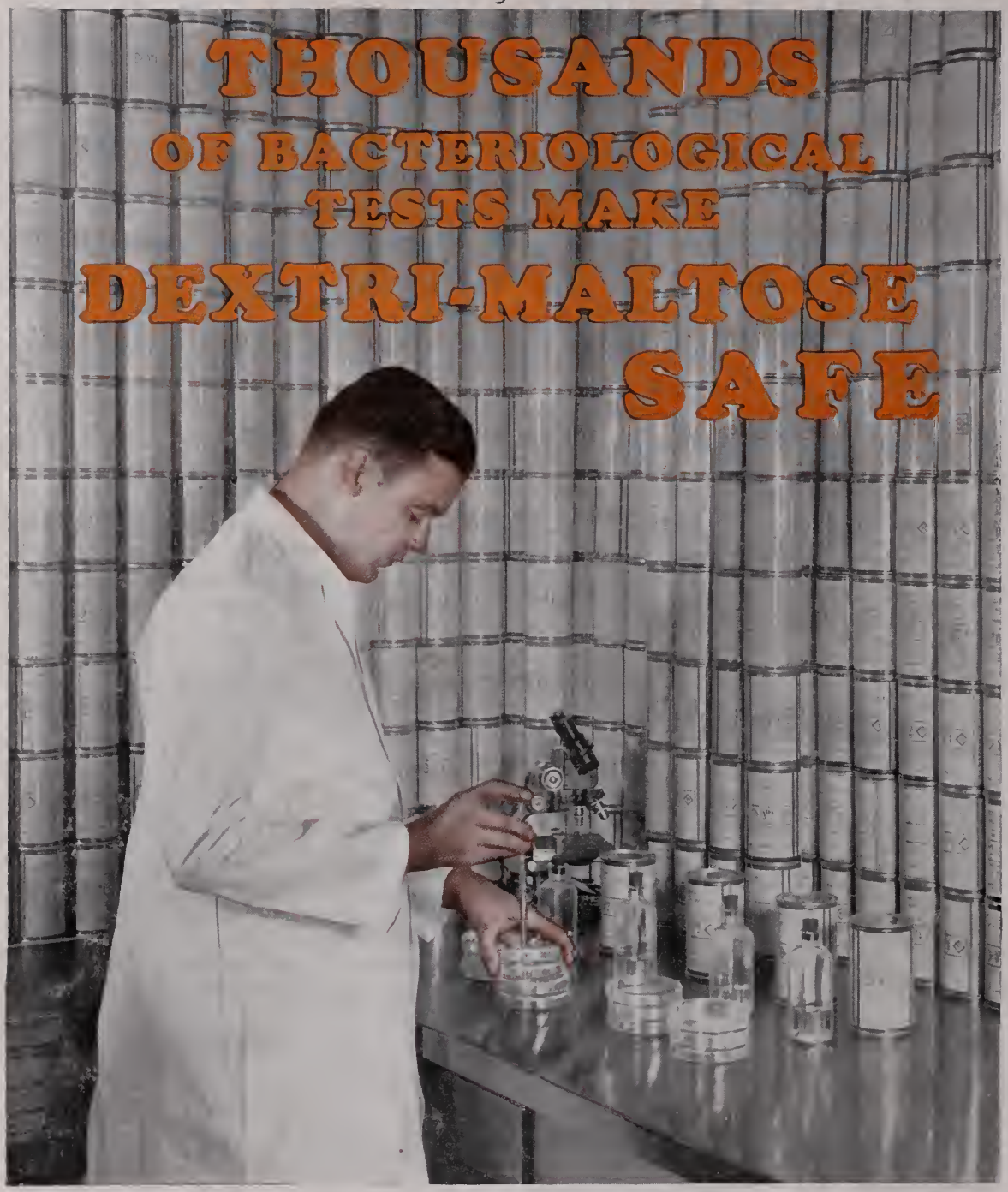

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Guest Editorial

Women in War Industries

THE present conflict has been defined as a global war. The fact is stressed that it involves not only the military forces but all men, women and children in civil life. Therefore no one is exempt from its effects and responsibilities, and an all out effort is essential for its proper and successful conclusion. To the old conception that the soldier wages the conflict there is added the man and the woman power behind the fighting lines to supply him in enormous quantity with the food and the weapons to accomplish his purposes. And woman finds herself a participant to an extent and to a degree never previously encountered.

Almost from the beginning of the war we have had brought to us by word and picture what the warring nations abroad have done to enlist women in varying capacities, as factory workers, nurses' aids, and in supplementary military and naval services.

And so in this country, emulating other examples, we have made strenuous efforts to impress women with the idea that knitting for the soldiers is an insufficient contribution, that they must be willing to assume other obligations which will release the available men from the factory bench and otherwise, for places in the fighting ranks. The propaganda apparently is successful if we are to judge by the statistics from the War Power Production Board. Women have been taken into the government bureaus in vast numbers to wield the typewriter, the filing cabinet, the card index machine and similar clerical apparatus. They have been organized into what may be designated as the supplementary combat forces, the Waacs, the Waves, the Red Cross and its many ramifications. For all these a woman may have her particular talents. But now she is being enlisted in other activities more directly concerned with defense and war material production to which are attached hazards and demands on strength and health quite in excess of those previously associated with the commoner forms of employment in which she has participated. Thus far it would appear that the labor of women has proved of value and if their induction into industry constitutes a part of the necessary effort to win the War, we should accept the decisions of our leaders. In doing so we must divorce from the movement any possible underlying element of glamour and purely financial stimulus and choose as participants those women whose entrance into industry would not disrupt their obligations to the family and to society as a whole.

Admittedly there are hazards in factory work which involve men less than they do women. Therefore the conditions for employment for the latter must be determined with great care. The ordinary requirements of general mental and physical soundness, as we might term them, must be supplemented by those involving her sexual sphere. Most healthy women are not greatly hampered by certain physiologic phenomena, such as

menstruation, but there are others definitely incapacitated. If not under normal conditions of life, the strains and stresses of many factory jobs might readily serve to produce abnormalities in these functions. A resultant interference with their work might therefore be expected.

But, in addition to an unattached and otherwise free group of women available for war services, there are the mothers of small children and the prospective mothers, who are tempted to enter factories by the temptations of an increased income which are held out to them. While propaganda by some public officials have called for the enlistment of all classes of women, other governmental and private agencies have recognized the need for caution. Thus the Children's Bureau of the U. S. Department of Labor after a recent conference, has promulgated a statement dealing with standards for maternity care and employment of mothers in industry, the provisions of which are believed to be well within the reasonable performance of all employers. It shows however that women are in a different class from men in so far as their employment on a basis in which sex can be excluded.

In considering the question of responsibility toward the unborn child, are we to depart from the conception that this is a paramount function of woman, that every protection shall be accorded her during this period, that her possible contribution to the making of war materials is of less moment than that she bear successfully a child, without hazard to her or her offspring?

It should be possible to exempt pregnant women and the mothers of small children at least until we have exhausted the ranks of those not so involved. There is still an army of young women engaged in non-essential occupations, a multitude of "hostesses," beauty parlor attendants, models, vendors of amusements, among others, who might be more profitably employed if necessity calls for them. Let pregnant women and mothers of small children fulfill the function for which nature and civilized society has designated them. Motherhood may eventually prove more worth while than the making of bullets. Whatever the problems involved, they demand attention but their possible solution must depend on reasoned study and thought and not hysteria. Physically and mentally fit women, married or unmarried, and free from family ties should be found in our vast population in sufficient numbers to avoid a resort to the other groups in our expanded war program.

One of the essential and basic requirements of a successful State, in the larger sense, is the family unit. While this may be subjected by various agencies to influences that tend to its disintegration, these should be combated whenever it is possible to do so. This has been accomplished more or less successfully in normal civil life, though an all out war will disrupt necessarily many of its ideals. A mother, however, whether actual or prospective, should be regarded in other capacities than that of mere worker in the war effort. She presents a factor which is concerned with the future. Her progeny, particularly if this is in the dependent or in the formative stage, demands an evaluation equal to that which her manual labor at a hazardous occupation might attain. When this war is over, the toll of deaths and injuries among our male population may prove appalling, and our growing children must in the course of time supply the deficit in numbers. The birth rate of this country in recent years has grown. We may assume that this is due to a number of factors—a greater number of marriages stimulated by the war, and particularly among younger people, by an improved economic status and, we may hope, by better prenatal and obstetric care. The pregnancy wastage from miscarriages and induced abortions is probably about the same, although this is naturally a speculative figure. However it is to be hoped that the greater number of babies will compensate for the losss and invalidism among those young men who are participating

in the war. One can only repeat therefore that we must give our mothers adequate protection so that they can bear their children successfully, free from possible accidents and other complications which might attend hazardous occupations. If we urge upon them such employment, do we not endanger in a sense, their importance in the social scheme for which we have endavord to set up an ideal? Their mechanical achievements would appear of less importance than the disturbance in human values which would result from unreasoned action. The problem of maintaining human reproduction is a complex one, it demands careful study, uninfluenced by the glamour and excitement which naturally attend the effort for victory by every possible means.

GEORGE W. KOSMAK, M.D.*

*EDITOR'S NOTE: Dr. Kosmak is President of the American Gynecological Society and also Editor of the *American Journal of Obstetrics and Gynecology.*

CARE OF THE TUBERCULOUS REJECTED FOR THE ARMED FORCES*

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The problem of tuberculosis control assumes additional importance with the dislocations of our social, economic, industrial, and public health structures brought about by war conditions. The relationship between war and tuberculosis mortality is a matter of historical record. We are familiar with the ravages of the disease in the war torn Europe of 1918, and there is reason to expect a similar condition resulting from the present conflict. The extent to which the influence will be felt in this country will depend upon the duration of the war and the degree of privation which occurs. As yet, we have no statistical evidence of an increase of the disease, but danger signs are already appearing.

We are confronted with problems of housing and over-crowded living conditions in most industrial areas. Thousands of workers and their families are living in makeshift quarters. Men and women are accepting jobs without adequate physical examinations and are without the necessary medical service to protect their health. This is particularly true in small plants. Industrial hazards have increased under the drive for maximum production. Factors of physical and mental fatigue are laying the groundwork of lowered resistance. The danger of contact infection is increasing. Civilian physicians are entering the military ranks in such numbers that medical service at home is being curtailed. In Pennsylvania, tuberculosis hospital facilities, always below normal needs, are inadequate to provide care for the inevitable increase in patients.

This is the situation with which we are faced today. If we hope to preserve the hard won gains, our tuberculosis control program must be stepped up in proportion to the general all-out war effort. Health departments, voluntary organizations, the medical profession, social agencies, industrial groups, and the lay public must extend their efforts beyond anything they have done in the past to maintain these gains.

Compared with the problem in 1917 and 1918, we have the advantage of a much lower death rate and the experience of twenty-five years of progress in scientific achievement. At the beginning of the war period in 1917 the tuberculosis mortality rate was 147 per 100,000 of population and by 1918 it had increased to 149 per 100,000 of population. Following the war there was a steady decline until today it is 42 per 100,000 of population. The present improved techniques for the diagnosis of tuberculosis now being used in the mobilization of our Armed Forces are shifting the responsibility from the Federal to the State government by eliminating men with tuberculous lesions before they are inducted.

In World War I physical examinations alone were used to determine the presence or absence of tuberculosis in the candidates for military service. This method is one which we know lends itself to a high percentage of error even when done by an experienced physician. As a result, thousands of

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men were accepted for military service with unrecognized lesions in their lungs which flared into active disease at a later time. How much of this activation was due to military service cannot be determined. However, they have been cared for by a generous government which is still paying the bill twenty-five years later. The Federal Government has already spent in excess of $960,000,000 in hospitalization, compensation, and insurance for these men. We have no means of estimating what percentage of this group would have become responsibilities of the State had they retained their civilian status. Probably the number would have been large, and perhaps that particular group of men was fortunate to have become wards of the Federal Government.

Today military physicians have the advantage of twenty-five years of experience in tuberculosis diagnosis. They do not depend on physical examination alone but are using the far more efficient method of rapid chest roentgenography. Speed and accuracy, both important factors, are provided by improved technical equipment and better trained personnel. The government has set a high standard of disqualifying pathology in its determined effort to keep tuberculosis at a minimum in the Armed Forces. On this basis many men may be unfairly disqualified, but such errors are certainly on the side of safety. Those who have disqualifying pathology are returned to civilian life where they become the responsibility of the local health authorities.

As means of early diagnosis, chest roentgenography has already proved the existence of a large amount of unrecognized pathology in the military age group where physical disability should be at a minimum. As a result of this, tremendous impetus has been given to this diagnostic procedure in case finding. If, on the basis of their past experience, the military authorities now consider it economical to make routine chest x-rays of all men, is it not worth while to think in terms of the same method for use in civilian groups? Certainly no less attention should be given the civilian groups for the benefit of our war effort. The value, however, of finding active cases and those with potentially dangerous disease is limited unless we are prepared to provide proper treatment for the sick and adequate medical supervision for the potentially sick.

During normal times our facilities for both diagnosis and treatment are taxed to the utmost. With this intensified case finding program brought into operation by the war effort, are we prepared as a State to meet the additional burden? It is quite obvious that in order to do so we must have facilities beyond those that exist today. It is going to cost money and lots of money. This fact cannot be escaped, and the more we temporize the greater the cost and the longer we must endure the treadmill of continued spread of the disease. We look to the State Health Department for leadership, realizing their limitations if an inadequate budget for their use is provided by the appropriating bodies. Unless an adequate budget is provided, there is danger of the tuberculosis program bogging down at one of the most critical times in our history.

Last year the people of Pennsylvania contributed $700,000 for the use of the Pennsylvania Tuberculosis Society and its affiliated organizations. This sum represents $79,000 in excess of any amount previously raised in the State and was given voluntarily by many thousands of individuals. It should serve our legislators as a gauge of the taxpayers' reaction to increased appropriations for tuberculosis work.

Experience of the past thirty-five years has molded the pattern of an effective tuberculosis program. We must continue along these lines until more efficient methods are found even though the path seems circuitous. Education is the keystone. Education embraces a broad field and must constantly devise ways and means of spreading health information to the masses. Education must reach all ages and races, both the rich and the poor. Education must include special training for physicians, medical students, health officers, nurses, and social workers. Education must be dynamic or its effectiveness is soon lost.

Today special emphasis should be placed on education in industry. Management must be convinced of the need to protect their workers from the lurking danger of tuberculosis. They must be sold the idea of the economy of an organization free from the disease. They should know the value of recognized methods of prevention. The employees should know these facts in order to demand adequate protection. Knowledge about health conservation can do a great deal to protect the individual and keep the wheels of industry rolling to capacity.

The very fact that the Selective Service Boards in Pennsylvania have already rejected over 5,000 apparently healthy young men for military service because of demonstrable tuberculosis is convincing evidence that something is wrong with our civilian case finding program. Medical practice has followed the conservative idea of waiting until a patient becomes sufficiently ill to seek advice. In tuberculosis this can only lead to grief, for by the time symptoms appear the disease has passed the optimum time for treatment. The medical profession as well as the public must be educated to the value of routine chest x-rays of the apparently healthy if early recognition of the disease is to be accomplished. The tuberculin testing of school children and college students with x-rays of the positive reactors has been of great educational value. As a case finding procedure *per se* it has limitations because of the ages involved. Group examination of adults by means of chest x-rays of the apparently healthy is somewhat radical and for that reason has met with some opposition from organized medicine. The value of the method has not been seriously questioned by the profession, but objections have been made as to the *modus operandi.*

Fundamentally it must be remembered that tuberculosis is a communicable disease and as such is a public health problem as well as a matter of the individual's health. In fact, the very crux of the problem is to find the infectious patient and then break the contact between the sick and the well. If this one point is kept in mind, our efforts cannot go astray. Ways and means of providing x-rays have been the subject of considerable controversy because of economic questions. Tuberculosis is a killer in our midst and we must not quibble about the method of exterminating him. We might just as well quibble about the cost of anti-aircraft shells when bombs are dropping from enemy planes.

Tuberculosis has been a scourge of the human race so long that it is more or less accepted as one of the evils which we must endure. Its insidiousness and unspectacular behavior also contribute to a general feeling of indifference. We have become so hardened to the loss of 60,000 lives it takes each year in the United States that we forget every one of them might have been prevented. We are all familiar with the excitement and hysteria that occur when an epidemic of infantile paralysis is reported. The number of cases may be relatively small and yet it immediately becomes headline news. The public demands action, and precautionary measures to prevent its spread receive energetic attention. This is, of course, as it should be, but why the difference in attitude toward tuberculosis—also a communicable disease, also crippling children and young adults, and year after year taking a greater toll of lives between the ages of 15 and 45 years than any other disease? If we are sure of anything in the future, we can say with certainty that during the next year and the next and the next, Pennsylvania will lose approximately 4,000 persons from tuberculosis, most of them in the productive period of their lives, and many thousands more will be permanently crippled so that they must exist at the expense of the community. Aside from the humanitarian aspect, it is not good business or common sense. It is waste of the most expensive kind at a time when the conservation of manpower means more than at any time in our history.

In our present need for manpower we are confronted with the necessity of applying with vigor the principles of tuberculosis control developed over a period of thirty-five years. The Selective Service Boards have already placed in our hands over 5,000 young men they consider to be unfit for military service because of the presence of tuberculosis. Many of them are quite capable of continuing in some effective civilian pursuit, some need rehabilitation for work which suits their physical capacity, and some need treatment. They are confused, disappointed, and frightened. To most of them the diagnosis of tuberculosis came as a surprise and a distinct mental shock. In reality, however, they are more fortunate than those who have not had the benefit of a similar type of physical examination. Their infection has been recognized at a time when, for most of them, something can be done about it. But what will be done about it?

Under the present system they are reported to the State Health Department and referred to their family physicians or tuberculosis clinics for further observation and treatment. The physicians of the Selective Service Boards have neither the time nor the facilities to do more than inform these men of the reason for their disqualification. From a medical standpoint the rejectees fall into three groups. The first group includes those who have minimal

healed disease, probably not of clinical signficance but of a degree not acceptable to the army. In most instances they can quite safely return to their regular occupations. They do require some observation, but what is more important they are entitled to a careful explanation of their condition. To most of them the diagnosis of tuberculosis on their rejection papers means something to be feared. They cannot differentiate between primary infection, reactivation disease, and the numerous other diagnostic nomenclature which have been used. In their minds they have consumption. Unless this fear is dispelled, we are going to have a large number of anxiety states which will require further medical attention. An unqualified diagnosis of tuberculosis in these cases is unfair to the individual and may interfere with future employment, embarrass him in his social contacts, or prevent his taking out life insurance. We have seen a fair number of this type, and in some instances our best efforts have so far failed to nullify the mental shock of the rejection diagnosis.

The second group is made up of those men who have demonstrable disease of undetermined stability. They require careful medical observation. Some need a preliminary period of hospital study, but most of them can continue at home under the guidance of their own physician or of a tuberculosis clinic. In many cases it is a question of establishing their work tolerance. A change of job may be necessary or perhaps retraining through the rehabilitation service will keep them safe and self-supporting. Prolonged medical and social follow-up will protect their future and prevent a great deal of expensive hospital treatment.

The third group comprises the cases with definitely active disease. Except for the comparative few who can be treated at home, they should be admitted to hospitals immediately for their chance of recovery depends upon the availability of adequate treatment facilities. Their isolation is necessary for the protection of those with whom they are in contact.

We must look forward to the next few years with considerable concern. The duration of the war is problematical, the extent of future social and economic disruption is uncertain. There is little doubt, however, that tuberculosis will be adversely influenced by the duration of the war and the degree of the attending dislocations. To cope with the emergency will require a supreme effort from all those directly or indirectly concerned with the problem. The need for additional clinic facilities, more hospital beds for tuberculous patients, and an augmented nursing and social service is essential. To insure these, an adequate budget for the Health Department is imperative. The practicing physician must be tuberculosis conscious and tuberculosis wise. The voluntary organizations must streamline their programs to meet the emergency. Their facilities should be used by official workers and practicing physicians in every way possible. Finally, the degree of success which we achieve will depend upon the full understanding of the danger ahead, sufficient funds to carry on the work, and a cooperative effort to meet the situation.

Tuberculosis League of Pittsburgh.

A FURTHER REPORT ON THE USE OF RADIUM IN THE BENIGN CONDITIONS CAUSING UTERINE BLEEDING*

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In practically all of the diseases and disorders of the uterus, abnormal uterine bleeding is the one symptom that drives the patient to the physician. Too much, too often, too uncertainly, a little all the time, this is the clinical picture, the chief complaint. There is no remedy for bleeding. If everybody including our own profession could learn this fact, we would be a long way upon the road to Utopia.

There is always a cause for abnormal bleeding but you have got to look for it to find it. When the cause has been discovered there are many ways and means of removing it, so that the bleeding can be stopped and the anemia either forestalled or cor-

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rected. If we eliminate cancer, certain acute infections of the tubes, tumors of the ovaries, and abnormal puerperal conditions, we have left five well defined conditions that cover the field as causes of abnormal uterine bleeding. They are as follows: 1. Myopathic bleeding in young girls and spinsters. 2. Endometritis. 3. Fibroid uterus. 4. Fibroid tumors of the uterus. 5. Relaxed subinvoluted uterus.

In my paper read in Staunton before this Society on October 14, 1936, I reported 250 cases. I now wish to add 125 more cases, making a total of 375. Let us take up each under its heading.

Myopathic bleeding in young girls and spinsters is a clinical entity, fortunately rare, with a pathology as vague as its ingenious title would suggest. I have had but three such cases. These cases should be relieved by glandular therapy for their trouble resembles more a functional disorder than a structural change.

In a case in which I was consulted, a prompt relief was had from pituitary extract. I reported a case of a girl of 14 whose hemoglobin dropped to 20, completely and permanently relieved by curettement and packing with apinol. This clinical triumph was nullified completely by subsequent events to which certain of her associates of the opposite sex would bear lugubrious testimony. Then I reported a spinster—whatever that term may mean—in whom after many curettements I used 800 mg. hrs. of radium. She stopped for a year, dropped or shed her spinsterhood, married, and had a strong healthy child. Polak reports a number of such cases, some with similar gratifying results.

I have recently had a fourth case, too recent to claim a cure. She was 16, had been bleeding irregularly and oozing and spotting over a period of months. All the established remedies and all the older and newer endocrines and hormones, real and their synthetic analogies, as well as several curettements had failed to relieve her. I gave her 600 mg. hrs. of radium. This, if it follows former patterns, should stop her for about a year when she should begin to menstruate normally. The cervix and uterus were relaxed and atonic. The uterus, though small, was as flabby as its larger counterpart might be after delivery. Some day we shall learn enough to treat these cases less drastically. For the present in radium we have at least something to stand between them and hysterectomy, a fate that eventually overtook not a few who could not be relieved by any treatment then known.

Endometritis. (a) Proliferative, formerly called hypertrophic glandular endometritis. (b) Polypoid endometritis. Again we have a vague title meaning an inflammatory process when we wish to designate two slightly varying forms of hyperplasia of the endometrium. It is essentially a highly vascular thickening of the endometrium. It occurs from the early thirties to the late forties. If gotten early many of these cases yield to currettement.

When curetting, the membrane often is seen floating out of the os in large sheets, giving the appearance of the membrane of an early pregnancy. In the older women of this group we usually find the hard, unyielding, grating feeling imparted to the curette so characteristic of the fibroid uterus. Before the advent of irradiation many of these cases after repeated curettements had hysterectomies done as the last alternative.

Our combined series shows 104 of this class of cases.

The fibroid uterus. This is so clear-cut a clinical picture that one wonders why we hear of it and read about it so seldom. Its pathology consists of marked fibroid changes in the organ. One thinks of a clover field that has been dispossessed by broom straw until it is no longer a clover field at all. The uterine cavity is wide and deep, its walls hard, stiff and unyielding. A thick endometrium may cover its hard surface but oftener the mucosa is scant. Curettements and packings and medications do little good. Curettement followed by about 1800 mg. hrs. of radium usually stops all bleeding. It is the benign alternative to hysterectomy.

Our records show 153 such cases.

Fibroid tumors. I think most of us are operating on more tumor cases and irradiating fewer as the years pass, and experience points the way. We did not at first realize that a tumor that did not bleed any longer might still give great discomfort from pressure, and so all of us are discriminating a little more carefully. In women in whom the retention of the ovarian function is a real or sentimental factor, we operate. Large tumors, multinodular tumors, tumors accompanied by cystic ovaries or tubal disease are surgical. The ideal growth is

a globular growth the size of a grapefruit in a woman in her early forties. In large fibroids with dangerous anemia it is an invaluable adjunct to surgery, for, by stopping the bleeding a hazardous case may be made safely operable. Again, women with diabetes, heart disease or very high blood pressure may be made far more comfortable and have their lives prolonged, for they are denied the alternative of operation.

Our records show 98 cases in this group.

The relaxed subinvoluted uterus is an organ of many conceptions and not a few deliveries with inadequate periods of rest between times, large, indolent, relaxed, as though it hesitated between the normal and the gravid states, and wept blood over its mistreatment and neglect. Here we have a large, boggy organ, usually lying in the culdesac from its own weight and flaccidity. Its os is open. It is pale or yellowish in color. It bleeds a little almost all the time. There is usually a thick vascular endometrium secondary to the stasis and congestion. Since these women are usually older and usually poor they are curetted and given the larger dose, 1800 to 2000 mg. hrs., to restore them to a normal life again as quickly as possible.

We have 17 of this group.

In all of the 375 cases there has been no mortality, not one single death. We have had two or three severe reactions where some latent infection was fanned into flame. It is not a pretty picture and one does not wish to look upon it again. The uterus increases in size until it rises out of the pelvis, the broad ligaments are thickened, the temperature rises, and there is pain and marked general pelvic tenderness. In two cases it all subsided, and the third developed an abscess that emptied into the vagina. She is well today, but I grew a little grayer in the interim. She was a rather close personal friend.

I am so often asked, "What is the dose of radium?" It depends first on your patient and what you are trying to accomplish. In the young girl, you are trying to stop her periods temporarily to give tone to her uterine function and to damage her ovaries as little as possible while so doing, so your dose is relatively small—3, 6, or 800 mg. hrs. In women still in the menstrual age you may have the same object in view, to stop her flooding with a hope of her resuming her normal function later on. This result is not infrequently achieved. At worst you have only to repeat the treatment and this is far better than over treatment in too big an initial dose.

It takes a larger dose to stop flooding than bleeding. Flooding is an augmentation of the cycle of menstruation. You have to break the mechanism of the ovarian-uterine combination as well as to shrink the uterus by contracting it and diminishing its blood supply. In bleeding — and by this I mean that in which the ovarian function plays no part, it having been relegated to the limbo by nature in her autumnal disguise called the menopause—it is easier to stop an old woman's periods, or flooding, than it is to accomplish the same purpose in a young woman. It would be far easier to drown an old woman than a child. Young organs and functions are vital and tend to persist and survive. It takes far less radium to push an old woman over the line than would be required for her younger sister.

I have said nothing about x-ray because this paper, as its title implies, is not on that subject but on radium. X-ray could be substituted for many of these cases with the full expectation of equally gratifying results. But I am convinced that the curettement and biopsy which is a part of the routine in every radium case is of the greatest importance in establishing correct diagnosis in all of these cases. I picked up two cases of fairly early cancer of the body of the uterus in the past three months just by following this routine. Had they been given x-ray or radium without the curettement I fear that both would have missed something to which they were fairly entitled.

In as much as I discussed the after-care of these patients rather thoroughly in my previous paper I shall touch on but one aspect of it here. What is to be done about the nervous phenomena of the menopause, those hot steams and flushes, and cold sweats? I would say that the first thing to do is to see whether the patient is going to have such symptoms before beginning to treat her. Many women escape them in the natural menopause and many will escape them in the artificial counterpart, if left alone. In a woman whose uterus has been removed, theelin and its equivalents may be most helpful. In an older woman they may be helpful after radium. In the younger woman injudicious

use of these agents may bring on the very bleeding again which we are trying so hard to stop. The bromides and kindred sedatives sustained many generations of her ancestors, why not her too?

And while upon this subject may I say that these same estrogens or hormones are sometimes given to women with arrested cancers. Suppose it does stop her hot flushes. Does anybody really know what it may do to the cancer? Have we a right to give anything until we do know? Is it wise to stir the embers and blow on the ashes of a burnt dwelling as soon as the fire engine is back in its station?

Oh menopause, oh change of life, the crimes of omission and commission that are perpetrated in thy name!

DISCUSSION

DR. ALFRED P. JONES, Roanoke: Anyone who undertakes to discuss a paper of Dr. Peple's is at once confronted with two major difficulties. In the first place, very few men can equal his command of the English language; and, in the second place, it is difficult to disagree with his conclusions.

It is becoming increasingly evident that the consensus of opinion is that the field of radium in the treatment of uterine conditions has very definite limitations.

To begin with, it is recognized that the control of uterine bleeding by radium depends upon the effect of the radium on the ovaries and not on the uterus itself. We must, therefore, be willing to consider putting the ovaries out of commission at least temporarily whenever we resort to the use of radium.

This means, then, that in the treatment of excessive bleeding due to fibroids in the younger woman hysterectomy is a more conservative procedure than the use of radium, because one or both ovaries can be conserved.

For the treatment of the menorrhagia of the menopause, radium is definitely the method of choice.

Dr. Peple mentioned the occasional case of the very young girl with intractable bleeding when no tumor is present. I have seen two such cases, both of whom had bled white in spite of numerous currettements and whose bleeding was controlled by a dose of radium sufficient to stop the periods for nine to twelve months.

In both of these cases the periods returned normally.

Dr. Peple did not mention the danger of the application of radium in the presence of pedunculated submucous myomata, but I know he is well aware of this contraindication to its use.

It has been a great pleasure to hear this communication, as it is always a privilege to listen to any paper of Dr. Peple's, and I heartily agree with his ideas on the subject.

DR. JULIAN L. RAWLS, Norfolk: For nearly forty years I have been listening with a great deal of pleasure and profit to the various papers that Dr. Peple has favored us with and this morning has been no exception to that statement.

There are one or two things in his paper that I would like to emphasize. First, I would like to say something about the young girls with excessive menstrual bleeding. They are always quite a problem. If it were possible to pick out from the triad of endocrines which govern menstruation the one which is at fault, it might be possible to simply give the proper endocrine, then the problem would be solved. Sometimes the physical appearance of the girl helps us in this.

Radium certainly should be used guardedly, 300, 400, 600, never more than 800 mgm. hours. One thing that should be remembered if radium is used and a pregnancy occurs within a year, there is a possibility that the baby may be physically or mentally defective. Such stress has been laid on this by Cutler and others that I do not hesitate to tell these young women that if a pregnancy should occur, within the first year, I will abort them.

Another group of women with metrorrhagia has been somewhat of a problem to me. These are the women between 35 and 45 years with firm, hard uteri, with no definite nodules. The uterus is slightly enlarged and very little endometrial scrapings are obtained. They are radium resistant and if sufficient irradiation is used to relieve the condition practically all ovarian function will be destroyed. I believe that under 40 years a supravaginal hysterectomy is preferable. Beyond 40 years we do not have so much hesitation in destroying ovarian function. However, sometimes radium does not relieve the bleeding and they have to eventually submit to a hysterectomy.

I have just had a rather unusual accident following radium. We had a woman of 52 years with excessive bleeding who had never passed her menopause. We placed two capsules in tandem containing a total of 50 mgm. of radium in the uterine cavity. In that set-up there is not much more than 12½ mgm. at any one point. The screening was 1 mm. of platinum and a rubber filter. She received a total of 2,550 mgm. hours. Four months later she had what we thought was a hemorrhage from the uterine artery. Packing did not control it at all. A hysterectomy was done and it showed that she had a vesico-uterine fistula and what we had taken for blood was urine mixed with blood. She had been voiding normally.

I want to express again my appreciation of Dr. Peple's paper and my pleasure in listening to it.

DR. PEPLE, in closing: In the first place I wish to thank Drs. Jones and Rawls for their very kind discussion and lenient criticism of my paper.

Replying to Dr. Jones' question about the pedunculated submucous fibroids, I would state that I dealt more fully with such questions in my first paper to which this is a second section, largely to report additional cases. I think we are entirely agreed on all points under discussion.

Now, regarding the case reported by Dr. Rawls, I have never had a fistula following application of radium except in malignancy. It is not uncommon to get fistulae both into the rectum and into the bladder. I have one patient at this time, perfectly cured of her cancer with both a urinary and a fecal fistula into the uterus. She passes both out through the cervix instead of through the urethra and the rectum. I cannot explain the very unusual behavior of the radium in this case.

In conclusion, I will say it is always a pleasure to be in Roanoke, where there are located so many of my old pupils and old friends.

EPIDEMIOLOGIC STUDIES IN SYPHILIS*

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and
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The importance of epidemiologic work in reducing the incidence of syphilis is increasingly recognized. It is known that transmission of the disease occurs most often during the early or "acute" phases. The primary lesion or chancre is teeming with S. pallida which can easily be passed to another person. Likewise, the comparatively moist cutaneous lesions, mucous patches and condylomata of secondary syphilis are dangerous, as are the lesions of mucocutaneous relapse and recurrence. These recurrent lesions occur most frequently during the stage of early latency, and as the duration of syphilis increases, the frequency of recurrent secondaries decreases.

Hudelo and Rabut,[1] discussing recurrent infectious lesions in syphilis, describe a series of cases showing a preponderance of such incidents in the first two years after infection. The Cooperative Clinical Group[2] reported 84 per cent of mucocutaneous relapse occurring in the first two years of infection. Stokes, Besancon and Schoch[3] found 93 per cent of relapses within two years following the onset of syphilis. Vedder[4] quoted Tschistjakow "on the length of the condylomatous secondary period", based on 1,000 collected cases. In this group, the last condylomatous lesions developed within the first five years in more than 80 per cent of cases.

It appears that the infectiousness of syphilis closely parallels the recurrence of admittedly infectious lesions. This infectiousness is most marked in the early stages, in the first two or three years after onset, diminishing as the years pass. Fournier,[5] as early as 1880, recognized this fact. Vedder,[4] quoting Fournier's figures concerning duration of infection in 142 men at the time they infected their wives, showed that syphilis is most likely to be transmitted during the first two or three years after onset. O'Leary and Williams[6] observed that when one marital partner was infected less than a year before marriage, both husband and wife were infected in 83 per cent of families. If one was infected less than two years previously, both were infected in 33 per cent, and if infection had occurred less than five years before marriage, both partners were infected in 25 per cent of families. Stokes[7] cites Keyes' statistics on infectiousness concerning syphilitic persons who married and took no precautions against infecting their partners. During the first year the chances of infecting the partners were 12 to 1; during the second year, 5 to 2; in the third year, 1 to 4; and "all but nothing" thereafter. Concerning Keyes' statistics, Pusey[8] states: "These findings belong to the prearsphenamine and pre-Wassermann days. Modern statistics show a higher number of relapses."

Morgan,[9] in a review of the question of accidental transmission of syphilis by transfusion, concluded that *incontestable* reported cases showed the source of infection to be in the early or "acute" stage, or the transmissibility of the disease to be influenced by pregnancy. McNamara,[10] discussing this same subject, reported the use of people with late syphilis as donors for emergency transfusions, without apparent resultant infection.

Experimental workers and authorities on the subject[11, 12, 13, 14, 15, 16, 17] have shown that the body secretions and fluids (here are included seminal fluid, prostatic fluid, saliva, urine, milk, blood, and cerebrospinal fluid) harbour S. pallida more frequently in early than in late syphilis, especially during the early "acute" or eruptive stages. It seems

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probable that such secretions as saliva and urine may not contain the organism unless contaminated from mucocutaneous lesions.[16, 17] Sweat might possibly come under this category.

The foregoing emphasize the fact that syphilis is *much more transmissible* during the *first stages and early years*. Therefore, in any effort to reduce the incidence of syphilis through epidemiologic methods, it is found that concentration on *early cases* will bring the best results in proportion to the time spent. For practical purposes, we can limit the sexual partners of a patient with primary syphilis to those since a period of 90 days prior to the appearance of the chancre. This may be accepted as the longest possible incubation period. In the case of a patient having secondary syphilis, the inquiries would necessarily have to cover a longer period. When the patient has early latent syphilis, and the date of appearance of the chancre can be determined as not more than one year prior to diagnosis, it is found beneficial to include his contacts in an intensive study. This type of epidemiologic study requires patience and diligence, but has proved to be of great public health benefit.

There has, in the past, been much hesitancy on the part of physicians to delve into this very interesting side of preventive medicine. This can be understood because of the nature of transmission of syphilis. One feels hesitant to inquire into the private lives of other individuals; or the patient is at first reluctant to divulge such personal information. However, the necessary information may easily be obtained by tactful approach in the right manner.

For many years it has been routine procedure to carry out thorough epidemiologic studies on all cases of early syphilis entering the University of Virginia Hospital or Clinic. These studies often reveal the source case as well as other individuals who have been infected by the informant patient. The subject of contacts is never brought up at once—maybe not during the first visit. This is done only after carefully educating the patient as to the nature of syphilis, its dangers to those suffering from it, and the potential danger to those not yet infected. After this, the subject of possible sources and secondarily infected individuals will often be broached by the patient. The attempt is then made to obtain the names, addresses, and descriptions of all sexual partners of the patient within the indicated period of time. Since the source case infected the patient, this individual may still be a danger to others. Anyone with whom the patient has consorted since becoming infected may also have been infected and may now be a source of danger to others. It must be emphasized that the patient's identity will never be mentioned or disclosed in follow-up of the contacts.

There are several means of approaching these contacts. Occasionally, the patient will grasp the public health aspects of the situation and send or bring his (or her) contacts for examination. Letters on departmental stationery, informing the contacts that they are known to have been exposed to a serious contagious disease and that they may have become infected, will often bring them in for examination. If the contact's family physician is known, he may be informed of the circumstances and be able to have the contact examined with little difficulty. Personal visits to contacts may be made by the physician, a nurse, or the health officer. Any one or more of these different methods may be used, according to the circumstances of each case. Discussions of important aspects of this epidemiologic method have already been published.[18, 19, 20, 21] Clark[22] has recently reported further successes in similar work.

If epidemiologic work is confined to early cases, the additional number of persons with syphilis thus brought to examination and treatment will contain a high percentage of individuals with early infectious syphilis. *Concentration* of efforts toward *locating such cases and getting them under treatment* will prevent many other infections. A gradual decline in the morbidity rate of syphilis should thus be achieved.

REPORT OF CASES

During the period from September 1, 1938, to March 1, 1940, 66 cases of early syphilis seen in the University of Virginia Hospital and Clinic named a total of 157 contacts. These represented 147 individuals, of whom 102 were brought to examination. Of the 45 on whom no information was obtained, the majority lived at such a distance that reliance on correspondence was the only available means of getting the facts. When these contacts failed to respond, and we could not get a nearby physician or health officer to supply us with

needed facts, our efforts were necessarily counted as failures. Several of the contacts were strangers to our informants, and lack of information as to name or address prevented us from following them up. Of the 66 cases studied, 29 furnished information adequate for us to determine the source of infection in our original patient. While this is a small series of cases, the figures shown in Table I agree with the fact that syphilis is most infectious during the early stages.

With statistics such as these, we must be mindful of the possibilities of error: the fallibility of human memory, the tendency to keep secret extramarital exposures, the possible absence of early symptoms or the presence of pregnancy to delay them and alter the picture of syphilis. We can only sift the evidence in each case and include as of value those in which the facts can be scientifically accepted.

Table I shows duration of infection in the source cases at the time of infecting our original patients.

TABLE I

DURATION OF INFECTION	NUMBER OF CASES
Less than 6 months	19
6 months to 1 year	4
1 year to 18 months	3
2 years	1
4 years	1
6 years	1

This number of early cases of syphilis over a period of 19 months is quite small for a large clinic; but during the past 20 years, this clinic has conducted an intensive anti-syphilitic campaign in the immediate and accessible surrounding territory. This has been done not only through therapy, but through educational and epidemiologic activity. As a result, it must be deduced that the local incidence of syphilis has been lessened. It is of note that several "local" early cases acquired their infections at distant places and returned here for diagnosis and treatment. A number of additional cases undoubtedly went to private physicians. Also, beginning in September, 1938, there was an intensive syphilis survey of Charlottesville and Albemarle County, Virginia. This survey was carried out under the United States Public Health Service, the Virginia State Department of Health, and the University of Virginia Department of Syphilology and Dermatology. The survey maintained additional clinics in Charlottesville and Albemarle County, under the supervision of a member of the Public Health Service. A few early cases of syphilis were cared for in these outside clinics and therefore were not included in this study of Hospital clinic cases.

Table II shows the determination of possible source cases and exposed individuals, with their subsequent admissions for observation, and treatment if needed. In the event that these contacts lived far from the clinic, definite statements from their physicians were required before they were considered as having been examined. Through personal letters, personal visits, correspondence with physicians, and through help from State Health Departments, we were able to ascertain that more than 50 per cent of contacts living outside the county were examined (either here or elsewhere).

Table III shows the distribution of these individuals, divided into local (city and county), state, or out-of-state, with the numbers subsequently under observation.

Table IV shows a similar division of these individuals, with the methods used to place these people under observation and to determine their status from the standpoint of infection.

Table V shows the number of contacts named per case, the number examined, the number and per cent infected, and the estimated number of contacts

TABLE II
DISCOVERY OF EXPOSED PERSONS THROUGH QUESTIONING OF ORIGINAL CASE AND ADMISSION TO THE CLINIC CONSEQUENT UPON FOLLOW-UP

	Original Cases	CONTACTS							
		Named	Individuals Represented	Consequent Admissions					
				Voluntary		Follow-Up		Total	
				No.	%	No.	%	No.	%
White	23	50	48	2	4.1	35	73.0	37	77.1
Colored	43	107	99	28	28.3	37	37.3	65	65.6
Total	66	157	147	30	20.4	72	49.0	102	69.4

infected, with the estimated number of infected individuals for each original case.

It will be seen that this program resulted in the discovery of 62 additional cases of syphilis. All were placed under treatment, thus eliminating many potential foci for spread of the disease. The majority of these discovered cases were in the primary or secondary stage or had syphilis of less than one year duration when brought to examination. Of the 29 which were established as sources of infection in our original informant patients, 19 had syphilis of less than six months' duration (Table I). Even the source case whose duration was six years was found to have infectious lesions of mucocutaneous relapse, darkfield-positive, when examined. (Diagnosis of this man's infection had been made at the time of his primary lesion. However, after comparatively few treatments, he had moved away and all efforts to locate him had failed. He had received no further specific therapy).

TABLE III
INDIVIDUALS NAMED AS CONTACTS DIVIDED ACCORDING TO LOCALITY, WITH OUTCOME OF EFFORTS TO GET THEM UNDER OBSERVATION

	Individuals Named	Individuals Examined		Individuals Missed
Local	78	64	(82%)	14
State	57	30	(52.6%)	27
Out-of-State	12	8	(66.6%)	4
Total	147	102	(69.4%)	45

TABLE IV
METHODS USED IN OBTAINING EXAMINATION OF INDIVIDUALS NAMED, WITH FREQUENCY OF SUCCESS OF EACH ACCORDING TO LOCALITY

	Local	State	Out-of-State	Total
Voluntary	24	6	0	30
Personal Letters	23	8	0	31
Personal Visits	15	9	0	24
Letters to Physicians	0	4	2	6
Brought in by Informant	2	1	1	4
State Health Departments	0	2	5	7
Total	64	30	8	102

TABLE V
NUMBER OF EXPOSED CONTACTS, NUMBER INFECTED, PERCENTAGE INFECTED, AND ESTIMATED NUMBER AND PERCENTAGE INFECTED

	Original Cases	Exposed Contacts						
		Total Number	Number per Case	Admitted or Studied Elsewhere			Estimated	
				Total Number	Number Found Infected	Per Cent Infected	Total Number Infected	Number Infected per Case
White	23	48	2.08	37	20	54.0	26	1.13
Colored	43	99	2.30	65	42	64.6	64	1.49
Total	66	147	2.23	102	62	60.8	90	1.36

If cases of early syphilis are put under regular, intensive treatment, mucocutaneous relapse will hardly ever occur while treatment is continued. Furthermore, it is known that the earlier treatment is begun the better chance there is of cure. As a result of a physician discovering syphilis in the early stages and instituting prompt, adequate, and prolonged treatment, these cases will be rendered non-infectious for all practical purposes. The resulting increase in early treatment of syphilis will also bring about more cures, fewer fatalities, and fewer late debilitating stages requiring support by

the public. This aspect alone will be a financial saving to the community in the future.

CONCLUSION

Syphilis is more infectious during the early or acute phase of the disease. Epidemiologic studies bring more beneficial results if confined to cases of primary and secondary syphilis, and early latent syphilis of duration less than a year. These studies constitute an important phase in any campaign to lessen the incidence of the disease. The work is not difficult and should be carried out by all physicians. Many early cases would thus be discovered, placed under treatment, and thereby rendered non-infectious. The results would benefit not only individuals but entire communities.

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DISCUSSION

DR. THOMAS W. MURRELL, Richmond: In the last few months there have been a number of papers published in the lay press dealing with the success of the overwhelming treatment of syphilis. The effect of these publications has been distinctly bad, inasmuch as they are giving the impression of a miracle treatment which does away with the boredom and trouble of what is recognized as standard therapy. While these new measures may tremendously influence the future, they are, at present, applicable only to a small minority of cases; and the big problem of syphilis has to be met by the proven measures of public-health control and the measures of therapy, which are proven on the basis of elapsed time.

The paper you have just heard is an example of what can be done and what must be done from the angle of public health. If work of this kind can be done in one small county, there is no reason why it cannot be done over a larger area. It is neither miraculous nor dramatic, but an example of hard work, which should receive our commendation.

DR. D. C. SMITH, closing the discussion: We were in hopes that somebody would ask some questions about the technique and so forth in following up syphilis contacts. Since no one did, I have one or two points I should like to emphasize.

Doctors have always hesitated to seek patients of any kind. In an important public-health condition, though, like syphilis, I think we have to forget about that side of what we might call medical ethics. It is for the good of other people that you are working; you are not just getting out trying to get patients. Where a doctor has a patient with early syphilis and he does not want to go into the matter of finding out the contacts and trying to get them in for treatment he can rely upon the health

officials. Health officers and health nurses in this State have had special training in the technique and method of following up syphilis contacts. If you do not want to do it yourself (while I think the doctor ought to do it himself), then you can report the names and addresses to the health department and allow the health department to interview the contacts and source cases. That, of course, will allow the person to go to whomever he prefers—either to you or to some other doctor.

At the University Clinic, we use mainly letters; and it is rather remarkable to see how much response one gets from a letter to patients. That is true not only of clinic patients but also true even of private patients. We have a form letter which starts out: "A friend of yours has been examined here at the Clinic and found to have an infectious disease, and we advise you to come in." We do not use the word "syphilis", but the letter does go out on the stationery of the Department of Dermatology and Syphilology. The stenographers speak of these as friendly letters.

Even in contacts who do not have lesions that are recognizable, those individuals should have a serologic follow-up, i.e., a test done every four weeks to six weeks for several months.

Recently a patient came in who appeared to have secondary syphilis. She was one of those rare individuals with secondary syphilis who do not have a positive test. That very day we happened to have her contact come in—a man with secondary syphilis, which, of course, clinched the diagnosis.

At the present time, because of the war situation, with training camps scattered all over this State, the search for contacts and source cases becomes a very important defense measure. It allows the diagnosis to be made early and prevents that individual from spreading the infection to somebody else, at the same time giving him a much better chance of getting a permanent cure. As Dr. Murrell said in his discussion, it is not cured in "one day," as recently claimed in a popular magazine.

LEUKORRHEA

A New Classification and a New Approach to Treatment*

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Leukorrhea is the symptom which brings more women to the physician, causes more misery to the patient and less concern to the doctor than any of the gynecologic complaints. Because it rarely disables the patient and only occasionally denotes fatal disease, its treatment is often dismissed with a prescription for the latest douche powder. Parenthetically, it should be said here that the vaginal douche, regardless of its chemical composition, is rarely if ever a satisfactory treatment for leukorrhea. A moment's reflection will reveal the fallacy of the vaginal douche as a therapeutic measure. The solution remains in contact with the vaginal mucosa and cervix for so short a time that its therapeutic effect must be nihil. Furthermore, infections of the genital tract are deeply placed in the branching racemose glands of the cervix or between the rugae of the vagina where the douching solution never enters. Lastly, some of the leukorrheas are the result of constitutional or endocrine disorders which are hardly within reach of a vaginal douche.

In order to establish a more practical and scientific approach to the treatment of leukorrhea, a study was undertaken on 200 consecutive gynecologic patients whose chief complaint was leukorrhea. Of this group, 174 could be followed for at least three weeks, and the principles of diagnosis and treatment set down in this paper were gleaned from my observations on this group.

THE DIAGNOSIS

Clinical History. A carefully taken history gives valuable help in establishing the anatomical site of origin of the leukorrhea as well as the pathogenic agent operating to produce the abnormal discharge. One is no less important than the other. If the patient states that the discharge dates from a childbirth or abortion with a history of puerperal sepsis, then one thinks first of a streptococcal infection involving the cervix and endometrium. A history of thick, muco-purulent discharge always incriminates the cervix because mucus-secreting glands are not found elsewhere. Leukorrhea in young unmarried women with no history of sexual exposure or surgical manipulation suggests an endocrine basis, usually an hyperestronemia with increased desquamation of the vaginal epithelium, rather than infection. A thin, serous discharge associated with itching suggests the Trichomonad; while a "cream cheese" type of discharge with intense pruritus is probably

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due to the Monilia. Purulent green-yellow discharge associated with some dysuria and frequency, especially when a history of contact with a suspected male is established, must focus attention on gonorrhea. Vaginal discharge in women past the climacteric or following radium or surgical castration will probably be found to originate in a thin atrophic endometrium and vagina which has become secondarily infected with bacteria. A blood-tinged, serous discharge suggests, but rarely is indicative of, malignancy; more often it originates from a chronic endometritis in a uterus with poor drainage due to a stenotic cervix. Leukorrhea in children offers the possibility of foreign body irritation, pin worm infestation, gonorrhea, or pneumococcus vaginitis.

PELVIC EXAMINATION

Vulva and Introitus. The labia, perineum, and introitus must be examined for evidence of leukoplakia, kraurosis, eczema, hair follicle infection, Skenitis, Bartholonitis, sebaceous cysts, and pin worms. Any one of these may be the sole cause of the leukorrhea, but more often the infected introitus is only a part of the infection which has already invaded structures higher up in the genital tract. For the clinical diagnosis of gonorrhea nothing surpasses in importance the careful inspection of Skene's glands. Involved in about 92 per cent of all women who have Neisserian infection and rarely invaded by any organism other than the gonococcus, it is the most important single sign in the differential diagnosis of gonorrhea. The pin-point areas of redness at Skene's ducts, seen when the urethra is everted with a cotton applicator, is tell-tale evidence. If pus can be expressed, so much the better. Redness about Bartholin's gland is often but not necessarily suggestive of Neisserian infection.

Vagina. The acutely red vaginal mucosa with punctate areas about the vaginal vault, associated with a profuse, serous discharge is characteristic of Trichomona vaginitis. The deep red, almost cyanotic vagina whose vault is filled with a white, creamy discharge will almost certainly be found to harbor one of the yeast fungi, usually the Monilia or the Trichophyton. The most frequent bacterial invaders of the genital tract are the anaerobic streptococcus and the colon bacillus; they are responsible in part for most of the mixed non-specific infections of the vagina and cervix. Each is found abundantly associated with other infections, such as the Trichomona and takes an active part as a secondary contaminant in many genital infections, notably in puerperal and post-abortal sepsis. The smooth, pale vagina with atrophic rugae is seen in senile vaginitis. In children with an acutely red vagina, one must consider the gonococcus, the pneumococcus, and the pin worm, as these account for most of the leukorrhea in children.

Cervix. Chronic endocervicitis is readily diagnosed by inspection. The dusky red endocervix with a muco-purulent discharge pouring from the external os is recognized without difficulty. Often it is accompanied by lacerations, eversions, erosions, polyps, and Nabothian cysts. It is the most common site of origin for leukorrhea. Practically all of the infections of the cervix are mixed infections, the anaerobic streptococcus and the colon bacillus predominating. It often serves as the focus of infection to reinfect other portions of the genital tract after they have been apparently cured; thus the eradication of infection from the deep racemose glands of the cervix is the first and most vital step in the cure of any vaginal discharge regardless of its type or origin. The deep branching glands of the cervix have naturally poor drainage and thus they are excellent sites for infection to linger and reinfect the entire genital tract. Satisfactory treatment depends on the destruction of these racemose glands.

Endometrium. The endometrium is more often infected than we have been led to believe. In my experience the thin, blood-tinged, foul discharge from the uterus is most often the result of poor uterine drainage secondary to cervical stenosis or acute uterine anteflexions. During every pelvic examination a sound should be passed to determine the patency of the cervical canal. Where there is obstruction and inadequate drainage, one will see a gush of foul drainage material when the internal os is dilated.

Endosalpinx. Rarely does a leukorrhea have its origin in the tube. Usually tubal infections seal off the cornual end of the tube, thus preventing any drainage into the lower genital tract. Nevertheless, in those cases of leukorrhea in which there is an associated salpingitis, Elliott diathermy or other appropriate treatment should accompany the attack on the leukorrhea.

Laboratory Examination

Three simple laboratory procedures are required for the routine study and treatment of leukorrhea. First, the vaginal pH is obtained with Nitrazine paper. It is a good guide as to progress under treatment because, as the vaginal infection heals, the pH reverts towards its normal of 4.0. In all leukorrhea, with the exception of Monilia, the vaginal pH is elevated, returning to normal as the vagina is restored to health.

Second, a dry smear is stained with ordinary methylene blue; this smear having been taken from the anatomical site which is most affected. Gram stain is only occasionally necessary to confirm the diagnosis of gonorrhea. From the stained smear, the number of epithelial cells in relation to the number of pus cells is studied, and the type of epithelial cell observed. If there are more pus than epithelial cells, then the leukorrhea is infectious in nature. In the normal vagina the ratio of epithelial to pus cells is approximately one to one. If there are many large keratinized cells and very few pus cells, then the leukorrhea is endocrine and probably the result of too much stimulation by estrogens with excessive desquamation of the vaginal epithelium. On the contrary, if the epithelial cells are small, basal type and somewhat degenerate, and accompanied by many pus cells, there is absence of estrogen stimulation and atrophy of the vagina. This is the picture of senile vaginitis. Careful study of the ratio of epithelial to pus cells and the morphology and the degree of keratinization of these epithelial cells is equally important.

Next, the bacterial flora is studied. Large, thick rods are seen in the healthy vagina; they are the Döderlein bacilli. They are not seen in the smear of leukorrhea until recovery is well established. The most frequent pathogen seen on stained smear is the short chain streptococcus usually called the streptococcus subacidus. It is an anaerobe, the most common offending agent in the genital tract, often found on smear in common with the colon bacillus, and it is my practice to classify such cases as "mixed infections". The typical coffee-bean intracellular diplococcus is easily recognized as the gonococcus under methylene blue stain. It may be confirmed under gram stain. Rarely one finds the diplococcus in capsule which will usually be found to be one of the pneumococci. Staphylococci are not common offenders in the genital tract. The parasites are not seen on stained smear unless special technics are employed.

The third laboratary procedure of value is the wet smear. A drop of the vaginal secretion dissolved in about 1 cc. of saline and spread on a slide may reveal the highly motile, flagellated protozoa known as the Trichomona vaginalis. One may find the branching mycelium and the buds of a yeast fungus, usually the Monilia. Occasionally one finds the larvae of Oxyuris vermicularis, the lowly pin worm. Occasionally a case of Paramecium vaginitis or Entamoeba vaginitis is discovered.

Clinical Classification of Leukorrhea (With Percentage Incidence in 200 Consecutive Cases)

1. Endocrine

(a) *Adolescent* (2½%).—A white discharge made up of large keratinized epithelial cells and no pus. Superficial erosion of cervix usually found. Probably the result of excessive estrogen stimulation.

(b) *Senile* (6%).—Serous discharge with small atrophic and degenerate epithelial cells, often complicated by a secondary bacterial infection. Follow estrogen deficiency after normal climacteric or surgical castration by radium or oophorectomy.

(c) *Ovulatory* (3%).—Clear mucus often escapes from the cervix between the 13th and 16th days of the cycle, result of gonadotropic stimulation at time of ovulation.

2. Bacterial

(a) *Gonococcus* (9%).—Green-yellow discharge with the typical gram negative intracellular diplococcus. Produces a Skenitis, often a Bartholinitis, usually endocervicitis, endometritis, and endo-salpingitis. Produces a vaginitis in children.

(b) *Mixed Infection* (37%).—Predominantly anaerobic streptococcus and colon bacillus. Yellow or white muco-purulent discharge of years' duration. Focus usually in a chronic endocervicitis, eversion, erosion, laceration, or Nabothian cyst. Infection is also found about the hair follicles of the vulva and always in the deep, basal layers of the vaginal mucosa.

(c) *Pneumococcus* (2%).—Yellow purulent discharge, most often seen in children and diagnosed by finding the typical gram positive, encapsulated diplococcus.

3. PARASITIC

(a) *Trichomona* (21%).—Profuse, irritating serous discharge associated with an acute vaginitis caused by the motile, flagellated protozoa which may or may not be related to the Trichomona intestinalis.

(b) *Monilia Albicans* (9½%).—White, cheese-like discharge. The branching, budding mycelium on wet smear makes the diagnosis. Vulva and cervix frequently involved.

(c) *Oxyuris Vermicularis* (Pin Worm) (2%).—Suspected in children with history of anal itching. One of these cases was in an adult. Larvae seen on wet smear. Lower bowel, vulva, and cervix usually involved as well as vagina.

(d) *Paramecium* (2%).—A well differentiated, highly specialized, unicellular organism, easily recognized by its rapid, fluid motility. It causes acute vaginitis and cervicitis. Usually associated with cystitis.

(e) *Entamoeba* (½%).—Causes acute vaginitis with serous discharge. Always a contamination by Entamoeba intestinalis.

(f) *Trichophyton* (2%).—Causes pruritus vulvae, often a vaginitis. Thick discharge with segmented mycelium on wet smear.

4. FOREIGN BODY

(a) *Contraceptives* (2½%).—Irritating jellies, douches, and mechanical devices may set up a non-specific vaginitis and cervicitis.

(b) *Masturbation* (1½%).—Most every type of household article small enough to be introduced into the vagina may at times be found. Organic substances such as hair, food particles, and wood set up the most irritation.

TREATMENT—GENERAL PRINCIPLES

It must be remembered that all of the leukorrheas with the exception of that caused by the gonococcus and that resulting from atrophic or senile vaginitis must be treated empirically. Leukorrhea caused by the gonococcus is treated specifically by sulfathiazole orally and sulfathiazole locally in the form of suppositories. Senile vaginitis is treated specifically with stilbestrol orally and stilbestrol locally in the form of a vaginal suppository. These two types of leukorrhea make up approximately 15 per cent of all cases which must be treated in private practice. Thus it becomes apparent that approximately 15 per cent of all patients with leukorrhea may be treated with specific therapy. The other 85 per cent must be treated empirically. It is no wonder, then, that a long list of so-called "specifics" for this or that type of leukorrhea have been suggested and found wanting. The truth is that no specific cure is available for this large group of patients. That does not mean, however, that most vaginal discharges cannot be stopped and the patient relieved of all symptoms. She can be cured if the pathological physiology is understood and the principles of treatment applied in accordance with this knowledge of pathology.

Obviously, the leukorrhea originating from a foreign body irritation, such as contraceptives or masturbation, is cured by removing the cause. The adolescent leukorrhea improves on thyroid through the anti-estrogenic effect of thyroid therapy. Leukorrhea of endometrial origin, seen occasionally in post-menopausal women, is cured by dilating a stenotic cervix. Pin worm vaginitis is treated by gentian violet locally and gentian violet tablets orally. Amoebic vaginitis is treated by vioform powder insufflations and vioform tablets orally. This leaves a group of leukorrheas, 81 per cent of the total, which may be classified as infectious leukorrhea because they result from some infecting organism, bacteria, parasite or fungus.

What are the important pathological principles of infectious leukorrhea to bear in mind before beginning treatment? They may be listed as follows:

PATHOLOGY OF INFECTIOUS LEUKORRHEA

(a) *Vulva.*—Skin of the vulva and perineum and especially the hair follicles harbor the bacteria, parasites, and fungi. Skene's glands only are involved in gonorrhea. Bartholinitis may or may not be gonorrheal.

(b) *Cervix.*—Deep racemose glands of the cervix are always involved in the infectious leukorrheas. Stenosis of cervix may be found.

(c) *Vagina.*—The rugae and small invaginations of the vaginal mucosa as well as the basal layers of the epithelium itself can be demonstrated to harbor the bacteria, parasites, and fungi.

(d) *Glycogen.*—The glycogen content of the epithelium is reduced in the infectious leukorrheas. This interferes with growth of normal acid producing vaginal flora.

(e) *Vaginal pH.*—Vaginal pH is elevated in all infectious leukorrheas except that caused by the Monilia. Restoration of normal pH is essential for

the destruction of the offending agents and for the restoration of normal vaginal flora.

(f) *Vaginal Epithelium.*—Vaginal epithelium is somewhat degenerate in infectious leukorrheas, poorly keratinized and largely basal cell type in senile vaginitis, and hyperkeratinized in adolescent functional leukorrheas.

These pathological principles must be borne in mind as the fundamental approach to the treatment of leukorrhea depends upon them. Every case of infectious leukorrhea is now treated by the author according to the technic described below. This is followed in every case of infectious leukorrhea except those where specific therapy is available. There are five steps in the treatment.

TREATMENT ROUTINE FOR THE INFECTIOUS LEUKORRHEAS

1. *Shave the Vulva.*—Practically all of the bacteria, parasites, fungi, and yeast may be found in and around the hair follicles of the vulva. Autoinoculation of the vagina is inevitable unless it is shaved. The patient is instructed to wash the vulva and perineum well twice a day with soap and water. She must have no intercourse during the three weeks' treatment period.

2. *Sound the Internal Os.*—Patency of the cervix is essential to adequate uterine drainage. If a small sound cannot be passed, particularly if it cannot be passed just after the menses, then the os must be dilated and a flexible spring coil stem pessary inserted.

3. *Chemical Cautery to Vulva and Vagina.*—The bacteria, parasites, fungi, and yeast which cause the leukorrhea are found in the deep layers of the skin, on and even in the basal layers of the vaginal epithelium. It is essential to destroy the infection in these deep areas and this is accomplished only by removing the superficial epidermis and superficial keratinized layer of the skin and vaginal epithelium. This is readily done by painting the shaved vulva and the entire vagina with a meta cresol sulfonic acid solution of formaldehyde, the most convenient commercial product for this purpose being *Negatan* (issued by Eli Lilly & Company). Make sure to rotate the speculum so as not to miss the anterior and posterior vaginal walls. Within 48 hours after this therapy the coagulated superficial epithelium peels off, exposing the deeper basal layers of the mucosa. This coagulum is always superficial, experience with well over 200 applications never having been followed by a burn or ulceration. The *Negatan* is applied by swabbing with a saturated cotton pledget, the excess solution being removed with dry cotton. This cauterization of the vulva, skin, and the vaginal mucous membrane is repeated once at the end of one week.

4. *Electric Cautery to Cervix.*—The deep, branching, racemose glands of the cervix with their narrow ducts draining into the cervical canal form excellent pockets for the bacteria, parasites, and yeast fungi. In almost every case of leukorrhea infection can be demonstrated in the cervix. It can be eradicated only by the destruction of the cervical glands. These glands extend to a depth of about 4 mm. beneath the surface of the endocervix; it is, therefore, necessary to destroy the cervical mucosa to a depth of 4 mm. and this is accomplished with a hot cautery or electrocoagulator. The burned endocervix sloughs out in about one week and this raw granulating area re-epithelizes in three weeks. It is for this reason that the patient is instructed to refrain from coitus for three weeks.

5. *Phenylmercuric Nitrate in Pectin Jelly.*—The patient is given a prescription for Phenylmercuric Nitrate (1-24,000) in Pectin Jelly, 1½ drachms, to be inserted into the vagina morning and bedtime for three weeks. This mixture has just been made commercially available, being packaged with a special vaginal pipe for the insertion of the jelly.[1]

Phenylmercuric nitrate, which has recently been accepted as a New and Non-official Remedy by the Council on Pharmacy and Chemistry of the American Medical Association, is one of the most effective bactericidal and fungicidal agents. Its use in the form of a douche in the successful treatment of leukorrhea has been previously reported. Numerous studies on its systemic and local toxicity have demonstrated its safety. Its potent bactericidal and fungicidal properties can be demonstrated in the laboratory, as seen in the accompanying illustrations which show the sterilizing effect of the drug on agar plate cultures of bacteria and fungi, when used in the concentration of 1-24,000. Its potent bactericidal and fungicidal properties can be demonstrated in the patient, as shown in the illustrations of vaginal smears taken before and after treatment. Three

1. Phenylmercuric nitrate in pectin jelly, issued under the trade name *Merpectogel,* was furnished by Wm. P. Poythress & Company, Richmond, Virginia.

weeks of continuous treatment with phenylmercuric nitrate in pectin jelly will sterilize the vagina. No bacteria, parasite, fungus, or yeast can be demonstrated after three weeks of therapy with pectin jelly containing phenylmercuric nitrate. The drug is dissolved in pectin jelly. Pectin was chosen after much consideration of the practical problems and the pathological physiology involved in leukorrhea. It must be emphasized that the therapeutic agent for the treatment of leukorrhea must fulfill certain requirements. There are five essential properties which the therapeutic agent employed in the treatment of leukorrhea must have.

These five essential properties are:

1. *Prolonged Action.*—The vaginal douche is ineffective because it remains in contact for so short a time that its therapeutic efficiency is nullified. Pectin sticks like thin mucilage and can be found in the vagina twelve hours after insertion.

2. *Bactericidal and Fungicidal Activity.*—A potent, non-toxic chemical is the phenylmercuric nitrate used in combination with the pectin jelly. Also the pectin itself is bacteriostatic and an excellent deodorant.

3. *Acidity.*—Vagina normally has a pH of 4.0. This acidity reverts towards alkalinity in all the infectious leukorrheas except Monilia. Pectin has pH of 3.1 which is intrinsic in the pectin molecule (pectin is polygalacturonic acid) and not the result of adding a water soluble acidifying agent which would comparatively be quickly carried out of the vagina by normal secretion.

4. *Carbohydrate Content.*—The normal vaginal flora is encouraged by a carbohydrate medium. Furthermore, the glycogen content of the vaginal epithelium is low in leukorrhea and should be replaced. Pectin is a carbohydrate.

5. *Epithelial Stimulation.*—The injured vaginal epithelium and the cauterized cervical epithelium are stimulated to more rapid regeneration by pectin. This epithelial stimulating property of pectin was first demonstrated by Dr. Bernard Fantus who proved the cellular stimulating properties of this substance.

Note: After completion of the treatment program, the patient is advised to insert 1½ drachms of phenylmercuric nitrate in pectin jelly during menstruation. This will prevent reoccurrence and at the same time acts as an effective deodorant and a most satisfactory and scientific addition to menstrual hygiene.

SUMMARY

Based on the study of two hundred cases of leukorrhea, the following classification with percentage, incidence of occurrence, and key to treatment is offered.

LEUKORRHEA

1. ENDOCRINE		
(a) Adolescent	(2½%)	Thyroid therapy (anti-estrogenic?)
(b) Senile	(6%)	Stilbestrol locally and orally
(c) Ovulatory	(3%)	No treatment
2. BACTERIAL		
(a) Gonococcus	(9%)	Sulfathiazole locally and orally
(b) Mixed Infection (Anaerobic streptococus and colon bacillus predominating)	(37%)	Special treatment—below
(c) Pneumococcus	(2%)	Sulfathiazole locally and orally
3. PARASITIC		
(a) Trichomona	(21%)	Special treatment—below.
(b) Monilia Albicans	(7%)	Special treatment—below.
(c) Pin Worm	(2%)	Gentian violet locally and orally
(d) Paramecium	(2%)	Special treatment—below.
(e) Entamoeba	(½%)	Vioform powder insufflation and tablets orally
(f) Trichophyton		Special treatment—below.
4. FOREIGN BODY		
(a) Contraceptives	(2½%)	Desist
(b) Masturbation	(1½%)	Desist

Special treatment based on knowledge of the fundamental pathology of leukorrhea is used as a routine therapy in all cases except those in which specific therapy is available as outlined above. The treatment is as follows:

1. Shave the vulva—scrub daily with soap and water.

2. Chemical cauterization of vulva and vagina with meta cresol sulfonic acid solution of formaldehyde (*Negatan*—Eli Lilly & Company). Repeat cauterization in one week.

3. Establish patency of internal os by passing sound into the fundus.

4. Electric cauterization of endocervix.

5. Phenylmercuric nitrate in pectin jelly[1] inserted b. i. d. into vagina for three weeks. Insert jelly[1] once daily into vagina during menstruation for three months following treatment.

Medical Arts Building.

A REPORT ON THE RECOVERY OF TUBERCLE BACILLI FROM MICROSCOPICALLY NEGATIVE SPUTUM COVERING A PERIOD OF EIGHT YEARS*

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During the past ten years numerous studies have been made in this country in an effort to obtain comprehensive data on the recovery of tubercle bacilli from body fluids. The initiation of such studies may be attributed to the occurrence of repeated negative microscopic evidence from suspected or known cases of infection. When it is realized that there must be present about 100,000 organisms in each cubic centimeter before there is much probability of finding them in smears, it becomes clear that the microscopical method of examination must be considered with due regard for the errors involved.

In the light of present day knowledge, traditional laboratory methods of examination for the early diagnosis of tuberculosis are becoming uncertain, and sole reliance upon microscopic work inadequate; these statements being applicable, however, to questionable and border-line cases, for the familiar view of a high Gaffky can be found, of course, with little experience and less trouble. So it is well to emphasize that in the diagnosis of tuberculosis, specimen of which may contain an immeasurable number of tubercle bacilli and still be microscopically negative, one should proceed further than the smear method; for a negative report involves an element of doubt, whereas, a positive culture assumes definite classification.

Animal inoculation is a time-honored method, and the susceptibility of the guinea pig extremely high. It has been routinely used for this purpose for a long time and is undoubtedly a fastidious detector of tuberculous infection. However, less than ten living tubercle bacilli, even of virulent strain, cannot be relied upon to cause disease in every animal; and there must be from ten to one hundred bacilli before inoculation is sure to induce a progressive and fatal disease.

A fact that strikes one forcibly is that the ratio of positive results from inoculation to that of positive results by direct smear is at least 100 to 1 in favor of the animal method; and the recovery of tubercle bacilli by whatever method assumes an important role in the security of those who come to us for help and advice.

It is to be regretted that no attempt has been made in this work to determine the relative merits of animal inoculation and the culture method, and the study is in too controversial a stage to permit of fixed opinions based on the various reports and points of view. Nevertheless, some of the modern bacteriological tests and medical literature make the claim that the more recent advances in the development of culture methods make it possible to attain equal or even greater accuracy by this method than by inoculation. Be that as it may, the matter seems open to further experimental investigation, for as experiments are multiplied, principles are better understood.

This work was begun here in 1934 and has continued to the present time. It was undertaken primarily as a diagnostic effort upon patients entering this institution. During this period of eight years, of 1087 admitted patients with repeated microscopically negative sputum, 8,830 cultures have been examined (this figure does not include repeats or special cases). Throughout this time positive evidence in sputum negative by smears has been demonstrated time and again by the culture method. In 1934, with technical difficulties still to overcome, the results of early performance were not very comprehensive, and we were unable to achieve anything comparable to those of later years. In that year we recovered only 10.1 per cent of positive cultures from patients microscopically negative. In 1941 the showing was more favorable, since we obtained 34.7 per cent positive cultures from specimens negative by smears. For the past five years the percentages have been fairly constant; any variation from year to year being due, no doubt, to the number of nontuberculous cases admitted from time to time. The incidence of positive cultures from specimens negative by thorough microscopic examination appears all too fre-

*Read at the annual meeting of the Medical Society of Virginia at a luncheon session at Catawba Sanatorium, October 7, 1942.

quently to be ignored; and support of this view will be found in medical literature. During the eight years under review, we recovered an average of 25.84 per cent positive cultures.

Within the limits of a small series of cases, it is not possible to establish any correlation of values in this work, and one frequently finds contradictory figures as to percentages of positive cultures from microscopically negative material. When it is considered how minute may be the number of tubercle bacilli in such material, discrepancies are readily understandable, for it is a tedious and painstaking task at best for even the assiduous to discover them. From the very trend of our nature, we are all too prone to lean upon the cultural for a final report. In this connection it is worth mentioning that unreasonably high percentages in culture work should be accepted with caution; for it all hinges upon zealous and meticulous effort.

There are a variety of media and culture methods, the majority of which are essentially the same. We have employed routinely three methods and a like number of media, using twelve culture tubes for each specimen. With due recognition of the merits of many media, it is acknowledged that Miraglia's, Loewenstein's and Petragnani's are undoubtedly the standards of most laboratories. There is little choice among the three, since all are excellent for the cultivation of tubercle bacilli. Evidence from observation, however, would suggest that it is best to use more than one method and medium for accurate work, because occasionally a colony or two will be recovered by one system, whereas the others will give negative results. No explanation for the selectivity of the organism can be offered. In most cases, one method and four culture tubes of any one standard medium will suffice and still attain considerable accuracy. As might be expected, work of this type is beset with possibilities of technical errors, and though a good portion of correct answers may be obtained with diligence, the culture method will not commend itself to those who seek short cuts, except in the most obvious cases.

Since standard media are somewhat difficult to prepare, of necessity we became interested in a substitute; one that would function well without greatly impairing fundamental values. There is on the market a well known medium originated by Bordet and Gengou for the cultivation of pertussis. This is manufactured by Difco Laboratories in powdered form, and has been tried here for several years. By its use many processes are considerably simplified, for it is necessary only to autoclave it, cool and add citrated blood, which can be readily appropriated from specimens collected for Wassermann or sedimentation tests. We do not mean to represent this medium as comparable to the standards, but there are many favorable instances of its performance.

While the acid-fast group of bacteria is composed of a number of organisms, few of these offer difficulties of distinction from the tubercle bacillus, for those parasitic upon man have special characteristics sufficiently marked to serve for differentiation. However, microscopic examination alone cannot discriminate between tubercle bacilli and other types of acid-fast saprophytes. Four factors are significant: time of development upon artificial media, bacillary clumping, chromogenic properties and variability in staining.

The acid-fast bacilli vary in the ease with which they grow under artificial conditions. Saprophytic acid-fast bacilli will readily develop at room temperature and upon ordinary laboratory media in two or three days, whereas the tubercle bacilli require special media for propagation and may take a week or more at incubator temperature before growth becomes visible to the naked eye. If there is doubt about an acid-fast colony, it should be transplanted and its development observed. If it attains a visible growth in three to four days, it is not tubercle bacilli.

The tubercle bacillus possesses another differentiation point which is significant and should go far towards distinguishing this bacillus from other acid-fast groups. The bacillary adhesiveness of the organism is well known. Instead of the uniform smear of individual bacteria, one encounters the usual clumping which is so characteristic of this organism. It is impossible to obtain a uniform distribution of bacterial entities throughout the whole smear if made from a culture: some clumping of bacterial masses will invariably be present.

A third point of distinction is found in the chromogenic properties of many saprophytic acid-fast groups. Pigmentation is more noticeable than in the tubercle bacillus, the color scale ranging from pink, yellow to brick red. There is, of course, considerable pigment in old cultures of tubercle bacilli, but in very young cultures the color is not marked.

A factor common to the acid-fast group is variability in staining properties. The tubercle bacil-

lus once stained, the dye is tenaciously retained; whereas the members of the saprophyte group vary more or less in their ability to withstand decolorization.

It may seem unnecessary to discuss the saprophytic acid-fast group to this extent; but since they are so widely distributed and occur so much more frequently than was formerly suspected, it is relevant to point out the pitfalls that they may present in culture work.

The procedure for the recovery of tubercle bacilli from microscopically negative effusions is simplicity itself. If free from secondary organisms, which is usually the case, the specimen is merely centrifuged and the sediment transferred upon a medium. The positive cultures ranged from 37.8 per cent in 1934 to 65.7 per cent in 1941; or an average of 57.2 per cent during the period of eight years.

It will be noted that these percentages are considerably higher than those for sputum. Evidence in support of these findings is that most effusions at this institution are of tuberculous origin; also that in the process of collecting specimens the cooperation of the patient is not requisite to the same extent.

Within certain limits, this work presents one difficulty which it has not been possible to overcome. It is the problem of obtaining a good specimen from the respiratory region. Three specimens of sputum are collected upon different days and sent to the laboratory for examination; following this, if results are negative by direct smear, the patient is given a bottle for a 24-hour sample, which is either concentrated or cultured. The bottle attracts considerable attention among the patients, for they soon become aware that it signifies negative results from previous examinations. Thus the patient early becomes negative-conscious; and, being human, he naturally desires to remain negative. Even with individual instruction and persuasion, all too often a poor specimen is received for examination, with, of course, negative results.

Throughout this work, for purposes of comparison, it was deemed advisable to use positive controls, the observations of which deserve mention.

During this period, 170 positive specimens with a Gaffky I, 120 with Gaffky II and 110 Gaffky III to VIII were cultured routinely under conditions similar to those of the negative specimens. A total of 400 controls were checked, and it is interesting to note that since 1935 not a single control containing a Gaffky I has failed to develop by the culture method. The higher Gaffkys, as might be expected, were all recovered with ease.

When we consider a Gaffky I, with a text-book equivalent of one to four bacilli per slide, and a yearly average of 25.8 per cent positive cultures from specimens with negative Gaffky, it seems that the merits of the culture method should be conceded without much doubt.

RADIUM: THE HISTORICAL ASPECT*

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The actual knowledge of radium began with its discovery in 1898 by Professor and Madame Pierre Curie of the Sorbonne in Paris; but certain events antedating this epochal discovery are of interest in a prelude to the historical narrative of this element.

As far back as 1752, when Benjamin Franklin made his celebrated experiment with the kite and key, William Watson of London passed an electric current through a tube partially exhausted of air, and found that the discharge traversed this more easily than air at atmospheric pressure. At about that time mercurial air pumps were developed; much higher vacua were obtained, and the passage of electrical currents through rarefied gases began. Such an experiment was done in 1859 by Julius Plucker, the German physicist. He noted a peculiar kind of luminous discharge which was henceforth called the cathode stream.

That the cathode stream represented a fourth state of matter was the conclusion reached in 1879 by Sir William Crookes.

As the result of such experiments Wilhelm Konrad Roentgen, Professor of Physics in the University of Wurzburg, Bavaria, was the first to recognize new rays which "for the sake of brevity" he called x-rays. This discovery was semi-accidental and oc-

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curred in 1895. Experimenting with a tube screened in black paper, Professor Roentgen found that barium-platino-cyanide crystals on the opposite side of the room became brilliantly fluorescent, as if exposed to sunlight. Thus he demonstrated the existence of invisible rays produced by the arrest of the cathode stream capable of penetrating opaque bodies.

His discovery opened great fields of investigation and led indirectly to the discovery of radium. Physicists began to seek substances which might spontaneously emit rays similar to Roentgen's rays.

Within a few months such a discovery was made. Henri Becquerel at the Museum of Natural History in Paris, attempting to determine if fluorescent substances gave off such rays, obtained a photographic effect when he placed uranium salts fluorescing in the light near plates wrapped in opaque paper. Then, one day, because the light was too bad to experiment, he put the salts and the plates in a dark cupboard. Subsequently one of the plates was developed and a photographic effect was found, showing that fluorescence was not responsible for the phenomenon. So was discovered radioactivity. For this work Becquerel later received, jointly with the Curies, the Nobel prize.

A search for other radioactive substances went on. The Curies worked along this line. They tested the activity of various minerals containing uranium and found that some of these minerals, for example pitchblende which contained 50 to 60 per cent of uranium, were several times more active than could be accounted for by the contained uranium. Following this lead, while working on several tons of pitchblende presented by the Austrian government, they discovered in 1898 a substance 2,000,000 times as radioactive as an equal weight of uranium. This substance was given the name of radium.

Thorium and numerous other radioactive elements were then isolated. In 1900 E. Rutherford showed that thorium continuously emitted a radioactive gas, thoron. Soon afterward Dorn isolated a radioactive gaseous emanation from radium, radon, a transitory product of great importance.

Rutherford in 1899 showed that the rays of a radioactive substance were not all of the same kind. He demonstrated the easily absorbed alpha rays and the more penetrating beta rays; as a result of the work of Giesel, Becquerel, Curie, Rutherford, Bragg, and others it was shown that the former were helium atoms and the latter negatively charged electrons. In 1900 Villard discovered the third type of rays, the gamma rays, the most penetrating of all. These were found to be of the same nature as x-rays, electro-magnetic waves of extremely small wave lengths. There followed the accepted theory that radioactive elements decompose, with the emission of radiation, forming new atoms having different chemical properties.

The ionizing effect of the rays, their absorption by matter, and the phenomenon of scatter with the consequent production of radiation of a lower frequency were discovered.

Chemical changes as the result of exposure to x-rays were noted. In 1899 Schaudinn reported his studies of the action of roentgen rays on many kinds of unicellular animals.

In 1903, Bohn, working on the eggs and larvae of sea urchins and frogs, first showed that immature and developing forms were more affected than were adult animals, that rapidly growing tissues were most radio-sensitive. In 1904, Perthes, as the result of his experiments with fertilized ascaris eggs, concluded that cells were most sensitive at the time of nuclear division.

Within a year of the discovery of x-rays injuries to the skin by these rays were observed. The biologic effect of radium is said to have been discovered quite accidentally in 1901, and radium therapy might be dated from that time.

It happened in this fashion: Becquerel carried a glass tube of radium in his waistcoat pocket for some hours and in about two weeks noted a severe burn of the skin. This was interpreted by Besnier as being due to the effect of the rays. Curie experimented on himself and confirmed the relationship. Besnier suggested that radium be loaned to the St. Louis hospital in Paris for clinical experiments, and this was done in 1902. In 1904 Danlos published an account of therapeutic results then obtained. Dominici concluded from his own studies that the radio-sensitivity of a tissue varied inversely as its degree of differentiation. In 1904 and 1905 Heineke demonstrated the very high sensitivity of lymphatic tissue and the high, but less pronounced, sensitivity of the hemopoietic organs. Between 1903 and 1906 numerous workers demonstrated the high radio-sensitivity of the testicular and ovarian germinal cells.

In the meanwhile it was shown by many observers that tumor tissues in general were more sensitive

than normal tissues; W. J. Morton, of New York, and E. Deutsch, of Munich, independently reported good results in the treatment of uterine fibroids by x-ray; and Robert Abbe of New York began using radium for superficial lesions and first used interstitial radiation. In 1906 Louis Wickham, of Paris, reported the result of two years of clinical investigation with radium, principally on skin epitheliomata. This led to the formation that year of the Laboratoire Biologique du Radium. H. Dominici of that institution aided in the development of various forms of applicators for the treatment of deeper growths, and especially he developed screens for greater filtration and penetration, and tubes for interstitial treatment. He particularly introduced methods of filtration to exclude the caustic beta rays of radium and formed the basis of this principle in modern technique.

Ouidin and Verchere, in 1906, and Cheron, in 1911, described methods of successfully treating menorrhagia and uterine fibroids by the intrauterine application of radium.

Wickham, Cheron, Fabre, Dominici, and Jacobs reported the treatment of carcinoma of the cervix with radium in and about 1910. Howard Kelly, of Baltimore, treated his first case of carcinoma of the cervix with radium in 1909, reporting with C. F. Burnam his results in 1915.

Great development followed the pioneer work and several now famous institutions devoted to radiotherapy were formed. Outstanding among these were the Radiumhemmet founded in Stockholm in 1910, the Institut du Radium of the University of Paris, and the Memorial Hospital in New York. The Radium Institute was founded in 1914 and consisted of two departments of scientific investigation. One department was a part of the University of Paris, was under the direction of Mme. Curie, and was devoted to physical and chemical research on radio-activity; the other was a branch of the Pasteur Institute, was under the direction of Professor Claude Regaud and dealt with the therapeutic and biological aspect. In 1922 an out-patient department, the Foundation Curie, was established.

Prior to World War I the most productive source of radium was the pitchblende from St. Joachimstal in Czechoslovakia. Later rich ores of uranium were found in the deposits of copper at Kantanga in the Belgian Congo; this was found to contain the richest radium deposits known. Large amounts of radium have been produced in the United States from deposits in Colorado but the production is said to be comparatively expensive. Smaller amounts have been produced in other countries.

Today radium has become an indispensable part of Medicine. Until World War II cancer clinics were being formed throughout the world; refinements in technique are being made, percentages of cures are being increased, and the work goes on.

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THE AMERICAN PATTERN OF ADMINISTRATIVE MEDICINE*

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There have always been the two parallel paths of medical practice, one that of the individual, the other of medical institutions, within which or out of which the doctor served as a member of a cult, sect, religious order, professional group, or under government.

Strength of personality developed out of the experience in many lands of a Galen or a Paracelsus, a Sydenham or an Osler, and the power of institutions of learning and of resorts to which the sick repaired grew with the skills of many collaborating to teach, to discover sickness and to heal it.

These have been reciprocal, interdependent, mutually stimulating features of that great mother of society, the art and science of medicine, the application of all experience and all the knowledges to the relief and comforting of mankind through or around his disabilities, by learning and applying Nature's secrets, the whole incomparable testament of human biology.

If we would be useful in our days, alert to the shifting of our social scenery, in step with the hastening tempo of the changes which follow new discoveries, massive growth of material wealth, and the eager groping of the average family for benefits out of the overflowing cornucopias of the sciences, we must as physicians, as citizens of no mean nation, members of the onrushing global commonwealth of man, look at ourselves objectively, consider if we have been worthy of the immense trust imposed upon us by virtue of our privilege as persons licensed by our fellows to deal with the intimacies, tragedies, exaltations and despairs of life and death.

We know our teachers as the students of Hippocrates knew him. We look with reverent admiration at the elder clinicians who work their respective wonders of diagnosis and treatment before our eyes in home, office and hospital. The very essence of our bond from generation to generation is the continuity of the medical tradition of individual skill and personal responsibility for all professional acts.

Over the years from Cos, Epidaurus, Gondra Sapor, Salernum and their successors, even the Lazarettos of John Howard's day and the centuries-old hospitals of England and other lands, down to the latest expression of organized care of the sick, there has been a wholesome sharing of growth and experience between personal and institutional medicine.

We can afford the time to stand off and look at the structure as it has grown about us, to recall something of its origin, its functions, scope and methods. I think of this structure as one symmetrical and beautifully proportioned as the Parthenon, exquisitely elaborate as the Cathedral of Chartres, enduring and uplifting as the Lincoln Memorial.

Setting apart as a topic for some other evening the private, or at least personal practice of medicine, based on the self-selection by the patient or on his behalf of the physician, and an economic relation between these two that is mutually acceptable, let us define administrative medicine and consider what I like to call the organized care of the sick and public health. Organized care of the sick consists of medical resources for the individual patient through institutions and agencies within which the responsibility for policy and performance of professional services is determined by the medical opinion of a group of physicians voluntarily associated for this purpose or accepting these obligations for civil government. Public health services consist of the application of the sciences and arts of preventive medicine through government for social ends.

Organized care of the sick in the civil sense includes at least eight distinct functional divisions, largely as an outgrowth or flowering of that central symbol of community care of the sick, the general hospital.

The general hospital, an institution primarily for the horizontal care of the sick, for whom home conditions are unfavorable for the particular illness or in conditions demanding such equipment and personnel and the combined resources of many as cannot be brought to the home for diagnosis or for treatment,

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has set patterns of organization, of trusteeship, of staff responsibility, of community relationships for support and for service which have been closely followed by all the other units in the same field of endeavor.

In this country contemporaneously with the building of our first hospitals came that provision for the care of the vertical sick, the up or ambulatory patient, which we call the dispensary or out-patient department. This provision for the beginnings and endings of hospital care, this place where the admission and discharge of patients suitable for bed care has made possible the management of the sick over a life-time as distinct from the brief urgent need of emergency conditions still appears as an independent institutional service, although generally recognized as an integral part or department of a hospital.

There followed chronologically as the next administrative provision for the sick the transportation or ambulance system which after evolution in the field during our Civil War was introduced in New York City by Colonel Dalton as a life saving method in a crowded metropolis. This brought the doctor of the hospital into the street, shop, factory or home, to the side of the woman in childbirth, to the site of fire, catastrophe, flood, murder, suicide or other accident.

Next in order of development came the visiting nurse, usually supported independently of the hospital, with a separate board, an advisory medical committee, and a director of staff and field education. While in the main visiting nurse services continue to be extramural agencies, cooperating with but not operating out of or as a part of the corporate being of a hospital, they represent the further extension of group standards, of collective techniques, of the skills and responsibilities developed in hospital wards and operating rooms for persons in their homes who cannot or need not enter a hospital for care.

More recently there have been created to meet a number of difficulties and conditions both medical and economic arising in the course of long enduring illnesses, special hospitals for the chronically ill. No advance in the humane care of the sick has illustrated better the modern conception of the right of the invalid to benefits from all the resources of the sciences. The unsuitability of the general hospital for chronic patients; the relative lack of attention given to the chronic ailment when the accident case or the pneumonia demand instant attention to save a life; the costliness of care; the social, the psychiatric, the employment, and the therapeutic problems of the chronic sick, all demand expert, specialized provision.

A sixth unit in our growing family of organizations for the sick is the convalescent home or hospital, that way station for the patient now out of danger, between the dependent state of bed care and the resumption of self-support, of housekeeping, of teaching or shop work.

Not only do such institutions facilitate complete and earlier recovery, but they relieve the general hospital of a burden of patients who no longer need the services of expensive and elaborate equipment and technical staff.

As the physician became increasingly aware of the social, economic, employment and family factors or components in the origin and management of disease, there came about through the genius and broad philosophy of Dr. Richard Cabot of Boston, an additional professional resource first applied for out-patients and now a recognized indispensable department of a general hospital. I refer, of course, to the social service department.

Medical social work, as a coordinated professional service with that of physicians, nurses and dentists on the staff of a hospital, and clearly distinguished from the services of the family relief or welfare agency of the community has become a respected field from which the diagnosis and treatment of the sick has benefited in accuracy and thoroughness, and through which the medical plan for the patient has been made more effective, because better understood and interpreted in the patient's home.

Finally we come to that instrument of society which first appeared to be a necessity and was proved to be practicable and efficient in the midst of the economic depression of the last decade, particularly in our large cities, home care of the sick by a panel of physicians cooperating under some agreement as to policies, or as an externe service by the staffs of hospitals for people of the neighborhood.

Leaving these functions for the sick thus briefly outlined let us similarly sketch the half dozen func-

tions accepted the world round as essential for the social application of preventive medicine.

There came at the beginning, and remains with us today in ever improving accuracy and completeness, the bookkeeping of the comings and goings of the human family and their passing or enduring and often fatal illnesses, the vital statistics of births, deaths and disease. Out of this were built the foundations of our knowledge of prevalence and much of the preventability of disease.

The first use made of vital statistics was to educate the public in the nature and controllability of communicable diseases, the pestilences of our ancestors, and still a present hazard to survival. The function of communicable disease control, has been more nearly well performed in the public's interest than has the prevention of any other category of disease of social significance.

As a corollary and necessary function, parallel and contributing mightily to control of communicable disease came environmental sanitation, a contribution of engineers, physicists, chemists, architects, entomologists and others.

The fourth public health function was demanded by the last two mentioned and came into being for states in 1894, and for cities in 1892, the public health laboratory for diagnosis, specific therapy, research analysis and control of foods, drugs, water, milk, air, etc.

These four dealing chiefly with activities depending for their effectiveness upon the exercise of authority, under the so-called police power of the sovereign states, were only latterly followed by the two which have revolutionized the relation of the health department to the public and to the medical profession. Only in 1908 was the first Bureau of Child Hygiene created in a department of health and in 1914 the first Bureau of Public Health Education was established, in each instance in the City of New York.

These two functions now well developed and organized depend upon the principles of educated public opinion and personal cooperation.

The bureau of maternity, infancy and child hygiene of today concerns itself with all matters affecting human reproduction, the growth, and development of children and the protection of the minors in a family against handicaps to body or mind.

The ever expanding function of health education, crude as it is, nevertheless gives promise of going far in its contribution to universal interest in health protection.

Time and the occasion do not permit an extended description of the inter-relation of these fourteen building stones in the structure of administrative medicine, or of the respective roles of voluntary or unofficial and official or tax-supported institutions and agencies, nor of the respective parts played at the local state, national and international levels, but I should like to call attention to some of the merits and results of this product of slow and well-tested evolution of the past and to some of the threats to its continued productiveness and related benefits in the years ahead.

The chief social excellence of the present facilities for care of the sick is their dual origin, support and standards, the one of voluntary, and the other of official nature. It is well that every community feels responsible for voluntary care of its sick. This has been met in most instances by better service and at less cost per unit of equal value than has been possible in tax-supported hospitals under the prevailing conditions of civil government.

The main feature of professional concern is that of standards of performance created by medical and hospital organizations and a quality of supervision of care of patients which reduces to a minimum the exploitation of the sick or their irresponsible treatment by persons and methods not accepted by the best qualified persons in the professional groups concerned. I refer particularly to the standards established by the American College of Surgeons, the American Medical Association, the American Hospital Association and by the national specialty boards and associations, as for obstetrics, pediatrics, etc.

The safeguards created within the institutions for the sick by the organized medical boards recognized by the Trustees as responsible for medical policies and performance are of the same general nature and for the same purpose, to assure for the patients the product of the best group thought and skill.

Similarly in the field of public health the standards of performance and method developed by independent professional bodies have dominated the conduct of official services and saved them from the easy deterioration of bureaucracy.

There are the priceless assets of voluntary, uncon-

trolled and uncontrollable private or individual and collective professional and social initiative and responsibility.

On the economic and political front there are serious threats, perhaps the inevitable accompaniments of a restlessness due to the unemployment and commercial distress of the depression period.

The answer to the economic instability of support of voluntary hospitals and similar institutions has been the development of voluntary hospital service associations.

The proposal of government has been compulsory sickness insurance schemes. I warn you to be alert to the implications of any federal proposal to dominate the field of medical care under whatever name it may be camouflaged.

There is no such thing as health insurance. Sickness, not health, is insurable within certain limits.

Since 1933 several proposals have been made with a view to bringing the services of medicine to more of our people by the use of federal authority and the persuasive argument of federal subsidy. No proposal so far made by the Congress or by boards or other federal agencies has been acceptable to the professions, the institutions, or the public primarily concerned.

I warn you to be prepared, to be informed, to be critical, to be well represented when the next and succeeding schemes are offered which fail to preserve those features of the existing agencies, institutions and professional services which have achieved such eminent success by the methods of the past.

When I say success, permit me to qualify that to this extent. Perfection has not been attained. Even and equitable distribution of services and costs has not been achieved. We know now more than we have applied. We can do more than we have done to determine the nature and provide treatment for the sick.

And yet, looking about the pre-war world we note the relative excellence, yes, superiority of accomplishment in prevention and care of sickness in this country when compared with that available for any comparable population known to human history.

We face no crisis of disease, no threat of calculable or preventable illness. We are entitled to the consideration of society because we have done reasonably well so far and wish to progress in the manner of free and independent people and not according to some pattern proposed by persons who have not carried the burden of personal responsibility for the life and death of their fellow men in sickness, and to be imposed by law to correct some inadequacy due to economic causes, and not to the public institutions which have been the product of the best thought and effort of disinterested persons over the past hundred years and more.

In closing let me express my confidence in the essential soundness and approximate adequacy of the present structure of administrative medicine in the United States and my conviction that present errors of form, standards and performance can be better, more quickly and more economically corrected by forces now operating among the institutions and professions concerned than by the means of federal domination by its authority or by the use of tax resources.

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IMPRESSIONS OF DIET AND DISEASE IN KOREA

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At a time when faulty nutrition as a cause of disease is receiving an increasing amount of attention, it may be of interest to the profession to learn that certain diseases of possible dietary origin common in this country are rare in a primitive country like Korea. I have checked my impressions of thirty-three years' practice at Soochun, Korea, with eight physicians of my acquaintance, all of whom had long experience in various parts of that country. The replies are condensed in Table 1.

The diet of Koreans in general, and especially at Soochun, which is located on the coast of the Yellow Sea, consists chiefly of unpolished rice boiled in unsalted water, and boiled barley. However, with each mouthful of rice or barley they eat a spoonful of their native pickle, *kimchy,* which is used throughout Korea, Japan, China, and elsewhere. This pickle consists of the raw vegetables,

turnips, cabbage, and hot red pepper, seasoned with garlic and salt. This undergoes a fermentation after standing a month or so, but it is considered to improve with age. Its odor becomes so strong that it is kept out of doors until the time of eating. The common foods are the following: rice, barley, vegetables, beans and peas of many varieties, spaghetti, egg plant, wild grasses, sesame seed, fish, bean curd, etc.

The cow is used chiefly for plowing and only within recent years has milk been used at all. Even now in our hospitals the safest and best milk is made from soy beans and answers every need for the baby. It is difficult to train the Korean how properly to use cow's milk, as the fly is such a common means of spreading dysentery. Besides, the above foods, for feasts, funerals, special occasions and those able to afford it the following also are eaten: beef, pork, eggs, bamboo sprouts, melons, celery (grown in water), barley candy, persimmons, chestnuts, pine nuts, potatoes, and many other things. While in recent years Korea has become a great fruit country, formerly there were few fruits except the persimmon and poor quality pears and berries. Dr. S. K. Oh, president of Severance Medical School in Korea, related how in former times when a mother died the only baby saved was that fed by the father who first chewed raw rice and gave it to the baby, the saliva of the father making starch digestion possible.

Dog meat can be bought in almost any market and is used more by the poor and as medicine. Where we use lard, they use sesame oil. While some pork is used by the Korean, it is used a great deal by the northern Chinese. In addition, they eat the soy bean in various ways. The most common form is that of a salty sauce quite similar to our Worcester sauce, called *chang* in Korean, *shoyu* in Japanese and *jangyu* in Chinese. It is pleasant to taste and is their universal seasoning where salt is needed. Almost every portion of food is dipped into this sauce before eating. *Soy bean sprouts* form an important part of their diet the year around. The dried beans are placed in wet ashes in a warm room, and in two or three days the sprouts appear. These are boiled, seasoned and quite tender and delicious. This means that a fresh sprouted vegetable can be had any day in the year regardless of the depth of the snow.

There are two very common soups, one being that of fish and the other of vegetables. Most any cabbage leaf, turnip or other vegetable that can be secured is boiled, sometimes with a fish head or small piece of other meat for flavoring.

Seafood is a popular dish. Korea has a long coastline and is much like the shape of Florida. When the tide recedes one can see women and children by fifties and hundreds wading out into the muddy beaches to gather such things as snails, oysters, crustaceans and sea "varmints" of a hundred varieties. These are usually cooked or boiled with some soup or served in small portions with each bowl of rice. About a tablespoonful is the usual helping but around each bowl of rice may be four or five of these small helpings. So the poorest people with a little barley or rice can eat relatively luxuriously with these masses of food gathered from the muddy and sandy beaches as well as from the streams and fields. *Seaweed* is commonly eaten, after being dried into thin sheets, dipped in sesame oil and then salted and toasted. This truly tasteful dish is undoubtedly a rich source of iodine.

The very poor will even partake of raw fish intestines, there being such a craving for meat. A woman once came to our hospital with a fish line hanging from her mouth. She reported that after eating some fish guts she discovered a string in her mouth, and pulling it back from her stomach found it caught. It was a fish hook and line which had been in the fish gut, and the x-ray showed the hook caught in her stomach, necessitating removal by operation. Girls of the silk factories often eat the silk worms which have been boiled in the cocoon to release the silk. These dipped in salt or bean sauce would probably be edible when one is very hungry.

The hot, fresh blood of deer, boar and other wild animals is valued highly in debility or impotence, but this is not universal enough to have much influence on the masses. In recent years we in America have been keen on liver in anemias, but for thousands of years the Koreans have eaten much liver. In their case, it is often dog liver sausage, made of dogs' liver and blood.

Practically no sugar is used, even in tea, and only occasionally will some barley candy be obtained.

One important aspect of their nutrition problem is the scarcity of fuel; as a result they use very little water in cooking and cook all foods for the least time possible. When food is slightly cooked, instead

of removing it from the fire as we do, they rake the fire away from the food and put it out to save the remaining fuel. Some lessons we can learn from this ancient people are quick cooking of vegetables, use of more sea foods, less sugar, and most of all the famous vegetable pickle, which means a spoonful of raw vegetable with each mouthful of food three times a day the year round.

Following is a discussion of the incidence of the various diseases listed in Table 1 with a few additional ones, together with an attempt to explain the findings.

GOITER.—Cystic and exophthalmic goiter are quite rare, only one person reporting it as common. Others report seeing "two or three cases a year." The ingestion of sea food, such as fish and seaweed, plus proximity to the sea with a resulting high iodine content of the soil is undoubtedly the reason for the low incidence of the cystic type. Dr. Power, located inland from the sea, reports seeing much simple goiter. During my stay I saw one case of exophthalmic goiter.

PELLAGRA.—This disease is relatively rare; only two reported it as common. In my colony of 700 lepers (receiving an institutional diet), a pellagroid condition with red rash on the neck and wrists and some stomatitis, would break out each spring, when the native pickle supply ran low. I was on the lookout for pellagra, and found it is rare among the non-leper cases. Dr. Oh, a dermatologist teaching in the Severance Medical School, states pellagra to be rare in Korea. This might be explained by the fact that raw cabbage eaten in their pickle is rated as fair source of nicotinic acid.

RICKETS is also very rare, and, off-hand, this would appear strange, as they are a poor people and their diet consists chiefly of rice and barley. While interning in New York, I noted that one of our then common operations was the correcting of bone deformities due to rickets. I was anxious to try out these operations, but not once in thirty-three years did I find a case of bow legs among the Koreans needing such correction. The rarity of this condition can be easily explained by the fact that the children go naked so much; even in the winter children may be seen playing naked in the sunshine, and every person remains tanned throughout the year. The climate of South Korea is mild, about that of South Carolina, and there is usually a six-weeks rainy season in June and July. The summer is hot and humidity is high, but fall and spring are delightful. In addition, the ingestion of fish viscera, including the liver, as well as the eating of dog's liver, would supply vitamin D to their diet

TABES DORSALIS.—Although not of dietary concern, it is of interest that while syphilis is as common as the common cold, that of the nervous system seems to be rare, and I do not recall seeing one case of tabes. I have been told that tabes is seen often in the ports where foreign syphilis has been brought in.

ESSENTIAL HYPERTENSION is quite low there as compared to this country. I have no explanation beyond the fact that they do not experience the high speed, high tension and fast life of this country. They are a quiet, easy-going people, who sleep a great deal; crops are made without too much strain and effort, and they usually do tomorrow what they can get out of doing today. There is, of course, hypertension in the nephritics, aged, etc. Could their abundant supply of vitamins partly account for this in addition to the lack of mental tension? Less worry, anxiety and mental strain probably plays a great part in this.

PERNICIOUS ANEMIA also is quite rare, for which I have no explanation. Secondary anemias are quite common, most often from such diseases as hookworm, pulmonary distomiasis and tuberculosis.

OBESITY in children is exceedingly rare. This would indicate proper functioning of the endocrines, associated with the rarity of thyroid disturbances. The one doctor who stated it was common probably had the question of old men in mind, as we do see the stout later on in life.

OSTEOMALACIA is very common in certain sections of China, but is rare in Korea. This is probably because the Korean women work out of doors the year round and obtain adequate vitamin D, as well as calcium and phosphorus from sea food.

SCURVY.—I do not recall having seen a case of scurvy in Korea; the raw pickle and bean sprouts the year around, combined with quick cooking, undoubtedly furnish adequate ascorbic acid, since cabbage is a rich source of this vitamin.

DIABETES MELLITUS.—The rarity of this condition might well be associated with the lack of obesity, relative scarcity of food, and the fact that sugar and sweets are little used.

GOUT.—Dr. Hirst states that his one case was in the old Korean king, and Dr. Lowe states that his

single case was in the wealthiest man in the province.

BERI-BERI is very common among the Japanese who use much polished rice, but it is not nearly so common among the Koreans who use barley and rice with much of the husk. Since the war with China the government has enforced a law requiring that the food be half rice and half barley.

DENTAL CARIES are rare in young people, though common in those past fifty. Our American dentists have marveled at the beautiful white teeth of the Korean, who uses little sugar and evidently has a good supply of calcium and vitamin D. In cleaning their teeth the Koreans place salt on their finger and massage the teeth and gums each morning; no brush is used. This massage is a good thing. On trips to the country we extracted hundreds of decayed teeth, more often in the aged people.

ARTHRITIS, rheumatic and deformans, is not nearly so common there as here, and their diet may play some part in this. The recent popularity of chaulmoogra oil in arthritis started from the observation that no arthritis is seen in leper colonies and chaulmoogra oil might be the cause. Rheumatic fever is rare among the Koreans, but common in American children in Korea.

No signs of axerophthol (A) deficiency were ever noted by me. Nyctalopia is fairly common, although I do not know if it is due to a dietary deficiency. It is interesting, though, that the untrained native "doctors" prescribe the liver of crows and magpies for weak vision.

CONSTIPATION is not an important problem, as they eat so many vegetables and coarse foods, besides walking a great deal. It is no uncommon thing for a person to walk 5 or 10 miles to market every 5 days. Fast eating and bolting of the food is a common error; indigestion and stomach ulcers are the results.

While *sprue* is seen among foreigners, it is seldom seen among the natives. Most of our sprue cases have followed long chronic cases of dysentery, and in recent years when dysentery was treated early there have been no sprue cases in our section.

NOMA is a common and most distressing condition which I suppose is due to an acute deficiency, usually following measles. I have always felt that this was due to improper feeding and poor sanitation of the mouth after these attacks of measles.

EUNUCHS are rather common, for in leprosy and tuberculosis there is often atrophy of the testes. Again, dogs, in licking feces from the naked babies, often bite out the testes. I have had many such cases brought to me. Occasionally castration is done for punishment.

TABLE I

OPINION OF NINE DOCTORS ON THE FOLLOWING DISEASES

DISEASE	COMMON	RARE	NEVER SEEN
Goiter	2	5	2
Pellagra	2	3	3
Rickets	2	5	2
Tabes	-	3	6
Essential Hypotension	-	6	3
Pernicious Anemia	-	6	3
Obesity	1	3	5
Osteomalacia	-	4	5
Scurvy	-	2	7
Diabetes	-	8	1
Gout	-	2	7

The doctors making these reports lived in different sections of Korea, so the further interior the less sea food. I am a bit surprised that two each report goiter, rickets and pellagra as common. The other eight condition reports show much the same opinion; rare or not seen. Pot belly in children is very common and one doctor based his diagnosis of rickets on this feature. This is due, I feel, to the large amounts of course foods taken, about a quart of rice being the usual quantity for one individual; besides the vegetables.

I am indebted to Professor R. J. Main of the Medical College of Virginia for suggestions and criticisms of this report, as well as to the following doctors from Korea who gave their opinions from memory: Dr. J. M. Rogers; Dr. L. K. Boggs; Dr. J. W. Hirst; Dr. J. S. Wilson; Dr. D. B. Avison; Dr. J. F. Preston; Dr. W. P. Gilmer; and Dr. Lowe.

CONCLUSIONS

I believe that the rarity of certain deficiency diseases, so common in this country, is due to such factors as the abundance of raw vegetable pickle eaten by Koreans as well as the partaking freely of sea foods, sea weeds, and soy beans, the good exposure of their bodies to sunlight, and short cooking.

RESULTS OF KOLMER COMPLEMENT FIXATION TESTS ON SPINAL FLUIDS WITH AND WITHOUT THE ADDITION OF EGG ALBUMIN TO THE COMPLEMENT

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It has been found that complement fixation tests for syphilis employing ice box incubation frequently give non-specific reactions with spinal fluids.

This phenomenon was first observed in quantitative tests with serum. Frequently the first two tubes carrying 0.2 cc. or 0.1 cc. of negative serum would show complete hemolysis, whereas, the following tubes carrying smaller amounts of serum would give a one, two, or four plus reaction. Serum controls carrying no antigen always showed complete hemolysis. The antigen control would either show partial or complete inhibition of hemolysis. These zonal reactions are peculiar to spinal fluids even though other findings, such as collodial gold curve, cell count, and protein content are normal. Giordano and Carlson[1] have advanced the theeory that the sera of some guinea pigs contain a substance which fixes complement in the presence of antigen at 6° to 10° C. This substance is heat stable and shows no inhibition of hemolysis at 37° C., the temperature at which a Kolmer complement titration is subjected for one hour.

The simplified Kolmer complement fixation test employing a single dose of 0.2 cc. or 0.1 cc. of serum is not subject to these false positive reactions. As reported by Kolmer,[2] the proteins or other collodial factors contained in 0.2 cc or 0.1 cc. of serum may prevent non-specific results. Spinal fluids, however, in a dose of 0.5 cc. may be lacking in that protection, the results being false positive.

Boerner and Lukens[3] have devised a method whereby a solution of egg albumin in saline may be added to spinal fluid tests as a protective protein. Kolmer has given his approval and recommends diluting complement for testing spinal fluids with a 10 per cent solution of egg albumin in 0.85 per cent sodium chloride.

Giordano and Carlson[1] and Harris[4] have discovered that serum from some guinea pigs will give a zonal reaction with one Kolmer antigen, while with another Kolmer antigen there will be complete hemolysis in the antigen control. Harris has reported a method whereby each guinea pig to be used as a source of complement should be given a trial bleeding and the serum pre-tested with the antigen to be employed in the tests. In this manner zonal reactions or false positives with spinal fluids may be eliminated.

A laboratory conducting serologic tests on more than a thousand bloods and spinal fluids per day finds it almost impossible to pre-test serum from each guinea pig used for complement.

The Laboratory of the Virginia State Department of Health since July, 1941, has examined 2,331 specimens of spinal fluid both with and without 10 per cent egg albumin. Spinal fluids yielding a positive reaction with egg albumin numbered 615. The number giving positive reactions without egg albumin but negative with egg albumin was 1,530. Forty-nine specimens gave anti-complementary reactions with egg albumin compared to 137 anti-complementary reactions with plain complement.

The majority of spinal fluids examined were from patients in insane and penal institutions. Complete histories were obtained on a small number of patients. Results of spinal fluid complement fixation tests from these patients with 10 per cent egg albumin complement were in complete agreement with histories.

"The mechanism[2] of these non-specific reactions is unknown, but they appear to be due to the presence in the sera of some guinea pigs of a substance fixing complement with antigen, or to obscure changes in the sera of some animals rendering their complement unduly sensitive to the occult inactivating effects of antigen."

SUMMARY

False positive reactions are encountered frequently in complement fixation tests with spinal fluids for evidence of syphilis.

A lack of sufficient protein suggests itself as a possible factor in the causation of these false reactions.

Egg albumin has been found to be a very satisfactory substitute for the protein deficiency.

Anti-complementary reactions, in some instances, are also inhibited by the addition of egg albumin.

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CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This woman was thirty-six years old, white, and approximately seven months pregnant. One pregnancy five years ago, resulted in an abortion after three and one-half months. Twelve years before, radium, dosage unknown to us, had been used for uterine bleeding. She had been seen by a physician early in this pregnancy but no pelvic examination was made. The physician who saw her about two weeks before her admission stated that her blood pressure was normal. When first seen by physician number three, the blood pressure was 180/110. General edema was present and the color of the skin was suggestive of nephritis. The uterus was the size of a seven months pregnancy, with the fetus in a transverse presentation. The head was in the right iliac fossa. The patient was admitted to a hospital for the treatment of toxemia. The day following admission, the membranes ruptured spontaneously and the cord prolapsed. When seen after this, the cord was not pulsating. An x-ray picture confirmed the position of the fetus. A vaginal examination showed the cervix very high, long and indurated. In view of the toxemia and the dead baby it was decided to induce labor by the insertion of a bag. The cervix was very difficult to bring down, and a small bag was inserted with difficulty. This gave some dilatation and the next day a larger bag was inserted. This came out after another twenty-four hours. The baby was delivered by bringing the feet down. The hand passed into the uterus at this time showed a rupture of the uterus around the edges of a fibroid tumor four or five inches in diameter in the lower segment. Under evipal anesthesia a hysterectomy was done at once. Sulfanilamide was placed in the wound. A drain was inserted and brought out through the vagina. A transfusion was given following which her condition seemed satisfactory and continued to improve for two days. On the third day she developed evidence of peritonitis and died rather suddenly. Autopsy showed several areas of peritonitis with small pockets of pus formation. The diagnosis was toxemia, ruptured uterus, fibromyoma of the uterus, and peritonitis.

COMMENT

This case was classified as a preventable obstetrical death and charged to prenatal care of poor quality and error on the part of the physician in selecting the type of delivery. The patient though toxic did not die of toxemia, although it was no doubt a contributing cause. She did not die directly of the hysterectomy but secondarily from infection. If the operation had been done earlier it seems reasonable to assume that this infection would not have occurred and consequently the death would have been prevented. The lack of efficient prenatal care plays an important part. A pelvic examination in early pregnancy should have shown the presence of the fibroid in the lower segment, a condition which is rather difficult to detect in later pregnancy. This fibroid was not recognized at the time the plan of delivery was selected. The high, long and tight cervix even without the presence of the fibroid should have given warning that a bag would probably not be satis-

factory. One member of the committee expressed the opinion that no active interference should have been done but the labor left to nature. This thought certainly deserves consideration. The danger of this course is that the labor would have been long delayed, infection encouraged and an impacted shoulder probably resulted. This of itself is a major obstetrical problem and in the presence of a fibroid sharing the pelvis, probably would not have saved the patient. Fibroid tissue does not dilate. It is possible that the delayed effect of radium on the cervix should have been considered. At present we view this case in retrospect and it looks very different from the picture seen by her physician before labor. In retrospect, Cesarean section and hysterectomy immediately following rupture of the membranes and prolapse of the cord, would have offered this individual a better chance of survival. It is hoped that discussion of it may he helpful to those who may meet a similar situation. This case calls attention to the dangers of the wrong use of bags, as well as the hazards of fibroid tumors in the lower segment of the uterus complicating labor and the penalty for the failure to make a correct diagnosis. It also illustrates the advantages of a complete examination during the early months of pregnancy.

MENTAL HYGIENE NOTES

Neuropsychiatric Society of Virginia.

The winter meeting of the Neuropsychiatric Society of Virginia was called to order at the Richmond Academy of Medicine Building by the President, Dr. Howard R. Masters, Richmond, on February 16th. Other officers were Dr. Edward H. Williams, Richmond, vice-president, and Dr. Joseph R. Blalock, Marion, secretary.

The first paper was that of Dr. R. Finley Gayle, Jr., of Richmond, entitled "Guillain-Barré Syndrome—A Case Report". The paper was read by Dr. Dale Groom, Resident in Neuropsychiatry at the Medical College of Virginia Hospital. A comprehensive review of the literature was made. Onset is usually acute with progressive motor involvement with flaccid paralysis of the peripherical type, primarily ascending, and with sensory disturbances.

A characteristic feature is a normal spinal fluid cell count with an increase in the spinal fluid protein. The usual outcome is recovery.

The case presented was five years of age, showed the usual features, and the usual progression towards recovery. Because of the pain and because of the question of poliomyelitis on admission the Kenny treatment was used.

The presentation was discussed by Drs. Riese, Gayle, Blalock, and Wilson. Dr. Riese pointed out that the syndrome was a clinical entity, not a neuropathological one, and that we should stick to the original clinical description of Guillain-Barré.

The next paper "A Prelimianry Report of the Study of 200 Autopsies at Eastern State Hospital with Special Emphasis on Neuropathology and Brain Tumor in Old Age," was read in two parts, the first on general considerations by Dr. I. Zfass of Williamsburg, and the second on the brain tumor series and case reports by Dr. Walther Riese of Richmond.

Dr. Zfass reported an autopsy rate of 45 per cent at Eastern State Hospital for 742 deaths. On lantern slides he gave tables for age distribution, psychiatric and anatomical diagnoses. Carefully tabulated weights of organs confirmed N. D. C. Lewis constitutional studies indicating smaller weight in the hebephrenic group as compared with the paranoid-compensatory groups.

In case reports Dr. Riese presented slides showing neuropathological changes in three seniles who were found to have brain tumors.

In the discussion Drs. Brown, Barrett, Wilson, and Zfass participated.

The third paper was presented by Dr. James K. Hall, Richmond, Past President of the American Psychiatric Association, on the subject "Occupational Therapy." Dr. Hall's approach was from the standpoint of energy.

Energy and matter (that which occupies space) are used and re-used. Energy disorders appear in symptoms, and we have the job of wooing energy back to its proper fields. The structure of the

psyche embraces all immaterial parts of the individual. Man's psychic energy is constantly at work. Freud's "libido" really refers to psychic energy. In a psychosis one is out of harmony with the world without; in a psychoneurosis he is living out of harmony with himself. One of the functions of occupational therapy is to restore the patient to the utilization of wholesome energy. Man insists on self-expression and this has to be released through energy. Proper and adequate outlets are necessary. Occupational therapy provides these. Inactivity carries deterioration with it. W. A. White said: "Good is not accomplished so much by 'work' but as a means of bringing the patient and therapist together—i. e., psychotherapy."

The paper was discussed by Drs. Tucker, Wilson, Henry, and Hall.

The closing paper was read by Dr. Beverley R. Tucker, of Richmond, entitled "Emotions and the Fear Reaction on the Home Front." Dr. Tucker's viewpoint was that due to hypo development of the hypothalamus there may result emotional disturbances such as mood swings, restlessness, blood pressure changes, and fear reactions, and he postulates on "hypothalmic fear syndrome."

Fear is a more powerful emotion than love. Fear is more powerful on the home front than among the armed forces. There were far fewer mental disturbances among the psychoneurotics during the bombing of London than was anticipated. The insecure, the propagandized tend to give way more. Dr. Tucker went on to stress the importance of telling people in general the truth about the past, present, and future. This will tend to reduce the unnecessarily large number on the home front who may show fear reactions, reactions not necessarily constituting a psychosis, but that are disrupting.

The paper was discussed by Drs. Wilson, Gayle, Blalock, Redwood, Masters, and Tucker.

New officers elected are: Dr. Joseph R. Blalock, Marion, president; Dr. O. B. Darden, Richmond, vice-president; and Dr. James Asa Shield, Richmond, secretary-treasurer.

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for January, 1943, compared with the same month in 1942, follows:

	January 1943	January 1942
Typhoid and Paratyphoid Fever	16	31
Diarrhea and Dysentery	95	119
Measles	417	844
Scarlet Fever	265	195
Diphtheria	57	71
Poliomyelitis	5	0
Meningitis	94	17
Undulent Fever	3	2
Rocky Mountain Spotted Fever	0	0
Tularemia	16	12

PELLAGRA*

Clinical pellagra indicates an advanced breakdown in nutrition. For every clinical pellagra case, it is estimated there are from twenty to one hundred with varying states of inadequate nutrition. The true incidence of pellagra appears to be underestimated. This is due in part to failure to suspect, to recognize, and to report cases. Shifting emphasis toward the early signs of deficiency has revealed a higher incidence than was formerly suspected.

Pellagra is classified as endemic, alcoholic or secondary depending on the chief cause of the vitamin deficiency. Among the endemic are included those in which food fads, idiosyncrasies, such as vegetarianism, and some ill-advised therapeutic diets figure as well as those in which it had not been possible to obtain proper food.

In alcoholic pellagra, the vitamin wants have not been satisfied because the beverage alcohol, the chief source of calories, ordinarily contains no vitamins and the diet does not make up the deficit.

The term secondary pellagra included cases in which the diet, satisfactory for the ordinary requirements of health, is inadequate when some disease obstructs the intake, accelerates the loss or raises the needs for the vitamin rich foods. The resulting pellagra is the same whatever the origin.

A large intake of corn or wheat grits increases

*A number of Virginia physicians requested the State Health Department's viewpoint on pellagra. It has been suggested that this information may be of some value to other members of the profession to whom it was not sent direct.

the requirement of the anti-pellagra factor. These vegetable proteins require the pellagra preventive factor for their proper utilization.

It appears on the basis of the evidence now available that the action of sunlight in pellagra is to be regarded as that of an irritant and pellagrins should be protected from exposure to actinic rays and skin irritants of all kinds.

PREVENTION:

Pellagra can be prevented by eating enough foods containing the components of vitamin B, especially the factor known as niacin or nicotinic acid (not nicotine). This is called the anti-pellagra factor. Secondary deficiencies of thiamin hydrochloride and riboflavin are also likely to occur.

Some of the best sources of niacin are: liver, muscular meats, including chicken and rabbit; fish, egg yolk, collards, kale and turnip greens, tomatoes, peanut butter and peanut meal, wheat germ, brown rice, yeast, and dried beans. Meat products contain more niacin usually than foodstuffs of plant origin.

Recurrence can be prevented only through a permanent change in the dietary habits of the pellagrin by prescribing the addition of the pellagra preventive foods to the diet. Permanent control can be obtained only by bringing about permanent changes in dietary habits.

TREATMENT OF PELLAGRA, ESSENTIAL POINTS:

1. *Nicotinic acid orally or parenterally as indicated*—in sufficient dosage to relieve acute symptoms. The chief index to dosage is the state of objective manifestations and the patient's complaints.

Pellagra is rarely a monoavitaminosis. Pellagrous manifestations of the gastro-intestinal tract, of the skin and of the nervous system yield rapidly to treatment with nicotinic acid, but the general weakness and anemia require simultaneous administration of other factors of the B complex in the form of yeast and liver extract.

The daily dose of nicotinic acid or nicotinic acid amide is between 100 and 1000 mg. It has proved advantageous to give 60-125 mg. four times daily by mouth.

2. *Other members of the B complex*—probably 50 mg. riboflavin each day.

3. *Liver extracts*—either orally or parenterally, in very large doses in the severe cases.

4. *Yeast*—not less than 30 grams and up to 200 grams or more daily of pure dried powdered yeast, depending upon the severity of the attack.

5. *A diet of 3,000 to 4,000 calories or more daily,* containing lean meats, liver, milk and other foods rich in the pellagra preventive factor.

6. *Feeding at frequent intervals,* and careful individual nursing in order to see that the patient actually eats and retains the large amounts of food necessary.

GROSS EVIDENCES OF MALNUTRITION

NICOTINIC ACID AND RIBOFLAVIN DEFICIENCIES

SYSTEM	FINDING	SUGGESTED DEFICIENCY SYNDROME
Mucous membrane	Scarlet red stomatitis with or without secondary infection	Nictonic acid
	Magenta glossitis (Red inflammation of the tongue)	Riboflavin
	Atrophic glossitis	Nicotinic acid, B complex, Addisonian anemia, Plummer-Vinson syndrome
	Cheilosis (Lesions on lips and angles of mouth)	Riboflavin
Skin	Nonspecific urethritis, balanitis, vaginitis, pellagrous dermatitis	Nicotinic acid
	Seborrheic lesions in nasolabial folds on face, behind ears and in skin folds. Fissures in angles of mouth.	Riboflavin
Neurologic	Nicotinic acid deficiency encephalopathy	Nicotinic acid
	Progressive stupor and hebetude Certain organic reaction psychoses	Nicotinic acid, thiamin and B complex
General	Underweight, underheight, edema and pallor	Calories, protein, iron, B complex

The Council
Medical Society of Virginia

The winter meeting of the Council of the Medical Society of Virginia was held at the Society's office in Richmond on January 22, 1943, with the President, Dr. J. M. Emmett, of Clifton Forge, presiding. Others present were: Dr. C. B. Bowyer, President-Elect; Drs. W. L. Powell and Waverly R. Payne, Vice-Presidents; Drs. J. L. Rawls, J. L. Hamner, Alex F. Robertson, Jr., H. B. Mulholland, and W. C. Caudill, Councilors; Dr. M. Pierce Rucker, Editor; Dr. I. C. Riggin, State Health Commissioner; Dr. Frank S. Johns, Chairman of the Legislative Committee; Dr. Hugh H. Trout, Chairman of the Procurement and Assignment Service for Virginia; and the Secretary.

Dr. Johns explained in detail the work of the Legislative Committee and stated that his Committee would need the full co-operation of all the members of the Society. He explained that at the last General Assembly a Commission was formed known as the Healing Arts Commission. The function of this body was to investigate and study the licensing of chiropractors and other kindred healers. Dr. Johns stated that a meeting of the Healing Arts Commission had been called for January 28th with a public session at which time this Commission would hear representatives of all groups interested. He felt that as many doctors as possible should be present for this hearing. Dr. Alex Robertson suggested that he thought it would be well to have representatives from the two Medical Schools in the State present at the hearing. Dr. Johns further advised the Legislative Committee that Mr. J. W. Holloway of the Bureau of Legal Medicine and Legislation of the American Medical Association would be in Richmond on January 28th to offer any advice which was required to the Committee prior to the public hearing of the Healing Arts Commission.

Dr. Caudill then offered a motion which was seconded and carried that the Council would support Dr. Johns and his Committee in their program.

In the discussion which followed it was explained that the Legislative Committee planned to secure the services of a publicity representative to go throughout the State and contact the doctors and address other interested groups on subjects of interest to the Medical Society of Virginia.

It was moved by Dr. Robertson and passed that the Secretary write Dr. Holland expressing sympathy from the Council in the loss of his wife and regret at his own illness.

Dr. Trout was asked for a report on his work of Procurement and Assignment of Physicians, and Dr. Trout stated that Virginia doctors had responded so splendidly that probably no more doctors should be needed during 1943. He said that there was no cause for alarm on account of the shortage of physicians in civilian communities. Dr. Trout stated that in an emergency there were enough Public Health Service men available to come into the State to do such private practice as might be assigned.

Dr. Payne of Newport News said he thought the trouble reported from his city emanated from laymen rather than doctors and the shortage of physicians reported there was due to the fact that they excluded specialists in their summary. Dr. Payne stated that the doctors of Newport News were very busy, but that they could continue to carry the medical requirements there.

The next business was action on the minutes of the meeting of the Council held in October, and these were approved as printed in the December MONTHLY.

Dr. Emmett announced that he had appointed Drs. Hutcheson and Rawls to serve with him as the Budget Committee of the Council.

Dr. W. T. Sanger, President of the Medical College of Virginia, and Dr. J. P. Gray, Dean of the Medical School, were presented at this time and Dr. Sanger said he wished to make a report for the information of the Council in regard to a proposed merger of the Medical Department of the University of West Virginia with the Medical College of Virginia. This plan is to enable students from the former school to take their last two years in Richmond, it not being expedient at this time to develop the West Virginia school into a four year school. This plan would be in conformity with the idea of bringing groups of states together in "educational

tie-ups". West Virginia is to turn over to Virginia a certain amount of money each year for the purpose, but the plan will in no way reduce the number of students from Virginia. No additional buildings will be required, but there would have to be additions to the clinical staff. If the two Virginians develop some satisfactory program, it should be helpful to both states. The final decision in this matter will be made by the Board of Visitors of the Medical College of Virginia, the Governor of Virginia, the Legislature of West Virginia and the Governor of West Virginia. Dr. Sanger emphaticaly stated that this movement was only in the planning stage and it had taken no definite form nor had any commitments been made.

The next question for consideration was the selection of a place and the dates for the 1943 meeting of the Society. Motion was offered by Dr. Robertson and seconded by Dr. Mulholland that the next meeting be in Roanoke with the request that the Roanoke Academy of Medicine be asked to arrange no entertainment. Dr. Powell said that all the expenses of the last meeting were paid for by money collected from commercial exhibits and he presumed there would be no objection to continuing that plan. The motion, with Dr. Powell's suggestion, was adopted and he was asked to find out from Hotel Roanoke if they could take care of the meeting in the week commencing October 4 or October 11, preferably the latter.

The following resolution adopted by the Maternal Health Committee at its meeting on December 4th was read:

> RESOLVED, That the wives and infants of the enlisted personnel of the armed forces be hospitalized under the same plan as is now being used by the State Department of Health for medically indigent maternity and infant patients with pathology.

Dr. Rucker, as a member of the Committee, was asked if he would explain the resolution and said that some states were giving hospitalization to the wives and infants of the enlisted personnel without consideration of their financial status, but Dr. Rucker would like for Dr. Riggin to speak on the subject. Dr. Riggin explained that the funds for hospitalizing these women come from the Children's Bureau and Department of Labor, supplementing those of the Health Department. As many people are able to pay for such service, he thought each such case should be investigated and given free service only upon the recommendation of a physician. If this is not done, anyone could make application. If there is no physician to report, the Department of Public Welfare will make necessary investigation. Personally, he stated, he would like to support the resolution from the Maternal Health Committee and hoped the Council would approve it, as hospitalization will be given these cases where needed. This motion was then duly approved.

In accordance with a request from the American Medical Association in December, it was voted to change the name of the Medical Preparedness Committee to the War Participation Committee. The suggestion was made that State Medical Societies cooperate with the State Procurement and Assignment Service and with the State Boards of Registration in plans for providing medical service in areas in distress for lack of doctors. Dr. Trout of the Procurement and Assignment Service stated that he was satisfied with the situation in Virginia at this time.

A letter was read from the National Conference on Medical Service in which it was stated that they felt medicine should be better represented in Washington and there should be a permanent office there, adequately manned, that they might furnish reliable information about health to bureaus, congressmen, senators, and the doctors back home. It was the consensus of opinion that it would be well to have such an office in Washington and it should be established by the American Medical Association. Motion made to this effect was adopted.

Dr. Emmett said it has been brought to his attention that there is a very great need for a larger number of private duty nurses, and he had been asked by the Nurses Association to get the doctors to stimulate interest on the part of young women in the State to go into training, with the certainty that there will be continued employment. He hoped the doctors would cooperate in this.

A letter was read from Dr. E. P. Lehman, Director of the Virginia Cancer Foundation, in which he referred to a question he mentioned to the Council in Roanoke as to their reaction towards a gift by the Virginia Cancer Foundation for the purpose of a statewide postgraduate study in the diagnosis and treatment of cancer, this to be administered by the Department of Clinical and Medical Education of the Society. While the Foundation took no action

on this at its recent meeting, there was considerable interest in the suggestion, and it seemed quite possible that they will appropriate $5,000.00 to employ an instructor to conduct cancer courses as outlined, after Virginia physicians return from war. A motion was then offered that the Council recognizes the need for postgraduate education on recent advances in the diagnosis and treatment of cancer throughout the State of Virginia and that it would welcome a gift of money which would make such a course possible after the war, this, when put into effect, to be supervised by the Department of Clinical and Medical Education of the Society.

There being no further business, the meeting adjourned.

AGNES V. EDWARDS,
Secretary.

Approved:
J. M. EMMETT,
President.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

In Memoriam, Mrs. Griffin W. Holland.

Our hearts are saddened as we pause in the process of our Executive Board meeting to pay a tribute of love and appreciation for the friendship, loyalty, and help to our Auxiliary as rendered by our friend and member, Mrs. Grace Wilkins Holland, whose passing we mourn. We feel it was largely through the efforts, interest and an appreciation for its need that the Northampton-Accomac Auxiliary was organized. She loved it next to her church work, both of which she loved with that untiring devotion of which she was noted in all her various activities. "Grace Darling," as I affectionately called her, was one of the purest, sweetest, truest friends I ever knew and I feel my life, as I am sure you feel, has been enriched by the contacts with her simple, sweet personality. With no "make up" on her face, no "put on" about her stately form, she was the embodiment of grace, culture, and poise, calm, peaceful and deliberate in all her actions. Though the disease that finally took her from us was making its inroads on her sweet life when she led our Auxiliary so ably in 1939-40, she assumed all her duties through the year and presided over our session meeting at Virginia Beach with all the ease and thoroughness of which she was always possessed, and told me many times of the pleasure both in the work and the delightful contacts she had with all the ladies with whom she worked. We shall miss her, yes, but we are grateful for the splendid life she lived and to us was given the honor to know her as friend. She died as she had lived, calm, and peaceful while sleeping. Without a struggle she slept on leaving us heartbroken, and sad and lonely, but she to awaken and be united with those whom she loved long since and lost a while.

Mrs. Holland was a descendant of a distinguished Eastern Shore of Virginia family, was born at Wilkins Beach on March 17, 1881, the daughter of the late Charles Frederick and Rebecca Addison Wilkins. She was happily married to Dr. G. W. Holland of Eastville and made her home at Stockley, the lovely ancestral home of the Hollands. To this union was born five children; three daughters and two sons, Mrs. Harry Denoon, Jr. of Nassawaddox; Mrs. Stuyvesant B. Wright of Norfolk; Mrs. Wm. L. Lawson, Jr., of Newport News; Julian Holland of Newport News; and Griffin W. Holland, Jr., of Eastville.

At all times Mrs. Holland proved herself patient and helpful as a country doctor's wife, both to her husband, and the county he served. She was prominent in the social, religious and civic life of the community. She was an active member of the Women's Club of the Eastern Shore, the Garden Club of the Eastern Shore, and a charter member of the U. D. C. and the Woman's Auxiliary to the Northampton-Accomac society. Indeed she was ever ready to serve when and where her services were needed. Her county paper paid her the following tribute:

"Mrs. Holland lived a gracious and noble life, befriending all who sought her companionship and giving guidance to her children and grandchildren

unobtrusively. Those who knew her and worked with her were struck by her gentleness, her loyalty, and her sympathetic understanding. She will be missed as a strong and active force in the community and her memory will be cherished as an able leader of her household, a giver of herself for her community, and a lovable companion to her family."

Truly, "none knew her but to love her, none named her but to praise."

MRS. HAWES CAMPBELL.

The Alexandria Medical Auxiliary

Held its January meeting on the 18th at the home of Mrs. Alfred Abramson.

Mrs. Nathan Schuman, President, conducted the business meeting which included a discussion by Mrs. H. A. Latane on a revision of the By-Laws and Constitution.

During the meeting it was announced that Mrs. Schuman, Mrs. W. Clyde West, Mrs. C. E. Arnette, and Mrs. Boyd R. Soyers, would form a delegation to represent the Auxiliary at the State Board meeting held in Richmond on January 27th.

Red Cross sewing activities are to be substituted for planned programs and the members decided to redirect their efforts to volunteer work.

Following the business meeting, Mrs. Leslie Lisle, chairman of the meeting, gave a review of the popular army book "See Here Private Hargrove".

MRS. C. E. ARNETTE,
State Press and Publicity Chairman.

Norfolk Auxiliary.

The January meeting of this Auxiliary was held on the 13th in the Library of the Medical Arts Building. This was in the form of a public relations meeting and members of various women's organizations in Norfolk were special guests.

Miss Mary Lou Green, Assistant Director of Nurses of the Norfolk General Hospital, gave a very interesting talk on the nursing aspects of the Kenny method of treating poliomyelitis.

Preceding the program, Mrs. Millard Savage, chairman of casualty centers, reported that an inventory had been taken of supplies in the office of Dr. Brownley Hodges, medical director of the office of civilian defense, and the equipping of stations would be completed whenever members can get more gasoline.

The next meeting of the Auxiliary will be a luncheon on March 15th.

MRS. BROCK D. JONES,
Chairman, Press and Publicity.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Essentials of Gynecology. By WILLARD R. COOKE, M.D., F.A.C.S., Professor and Head of the Department of Obstetrics and Gynecology, University of Texas. Philadelphia. J. B. Lippincott Company. 1943. xiii-474 pages. 197 illustrations, including 10 in color. Cloth. Price $6.50.

Diseases of the Breast. Diagnosis, Pathology, Treatment. By CHARLES F. GESCHICKTER, M.A., M.D., Lieut. Commander, Medical Corps, U. S. N. R.; Director of The Francis P. Garvan Cancer Research Laboratory; Pathologist, St. Agnes Hospital, Baltimore. With a Special Section on Treatment in Collaboration with Murray M. Copeland, A.B., M.D., F.A.C.S., Instructor in Surgery, Johns Hopkins Medical School; etc. Philadelphia. J. B. Lippincott Company. 1943. xxiii-829 pages. 593 illustrations. Cloth. Price $10.00.

The Sight Saver. By C. J. GERLING. Harvest House, New York. 1943. 202 pages. Cloth. Price $2.00.

How to Learn and Advance. By SAMUEL KAHN, M.D., Ph.D., Formerly on the Faculties of Georgetown and New York Universities; Chief Psychiatrist, U. S. Induction Boards for the States of New Jersey and Delaware; etc. xviii-196 pages. Cloth. Price $2.00.

Safe Deliverance. By FREDERICK C. IRVING, M. D. Boston: Houghton, Mifflin Company. pp. 308. 1942. Price, $3.00.

To those who are accustomed to the clarity and precision with which Dr. Irving discusses obstetrical problems, the first part of this book will be disappointing. He does not do himself justice. When, however, he begins to talk about other great Boston obstetricians, Walter Channing, the Storers and William Lambert Richardson, he warms up to his subject and gives us delightful pen pictures. These men stand out as actual persons as the author tells of the part they played in the development of the Boston Lying-In Hospital. Mrs. Higgins, the matron and superintendent of the hospital for forty-one years, is also a real person.

Dr. Irving discusses the major obstetrical problems, anesthesia, sepsis, eclampsia, obstetrical forceps, cesarean section, abortion, avitaminosis, placenta previa, authoritatively, historically, and particularly how the Boston Lying-In Hospital has dealt with them through the years. His chapters upon epidemic puerperal fever are especially interesting. They speak volumes for Boston conservatism. In 1843 Oliver Wendell Holmes proved conclusively the contagiousness of puerperal fever and laid down rules to be followed to prevent the doctor or nurse from carrying the contagion from patient to patient. Another Bostonian, the younger Storer, actually used rubber gloves in operating, but for the purpose of protecting himself against being infected by the patient. Yet in 1883, forty years after Holmes' essay, the Boston Lying-In Hospital was having epidemics of childbed fever. Not until the cause of the disease was discovered and Breisky in Prague and Tarnier in Paris had developed an antiseptic technic, did they take adequate means of preventing the disease in Boston.

This book should appeal to both lay and professional readers. In this day when there is so general an interest in obstetrics, it could well serve as a textbook for the layman, as to what's what in obstetrics.

The Mind and Its Disorders. By JAMES N. BRAWNER, M.D., Medical Superintendent, Brawner's Sanitarium, Smyrna, Ga. Walter W. Brown Publishing Company, Atlanta, Georgia. 1942. 228 pages. Cloth. Price $3.50.

This book is a classification, with brief descriptions and treatment, of the various mental disorders. As such, it is a definite contribution for often such of the laity as social workers are in need of a brief and clear explanation of the various psychoses. Unfortunately, the book is sadly handicapped by the author's meager knowledge of basic physiology and biochemistry, as illustrated by the following quotations:

P. 10 ". . . the final lines of discharge from the cerebellum are inhibitory in function. . . ."

P. 19 ". . . there is a chemical mediation of nerve impulses which causes the contraction of the muscles of the heart. . . ."

P. 40 ". . . every muscle and gland, even when the body is in a state of rest, is bombarded 10 times a second by electrical impulses. . . ."

The author speaks of patients who are chronically angry, without mention of the modern work on sham rage. Thyroxin is recommended (p. 70) although there is no adequate reason why the cheaper dried thyroid gland should not be used.

The reviewer is very dubious about the following statements: (p. 47) ". . . the praecox mongoloid . . . with legs crossed in Mongolian fashion, a habit characteristic of a remote Mongolian ancestor."; (p. 206) ". . . for a person to inherit from an ancestor desires and cravings which force him to commit crimes, and possibly murder. He is a 'black sheep' in a good family. No doubt the majority of thieves, hold-up men, bank robbers and safe-crackers belong to this class."

The author speaks very freely of toxins and toxemias resulting from nutritional deficiencies. Occasionally this may be true, as in thiamin deficiency, but in other cases the mere deficiency may produce the effects without necessity of postulating specific toxins. No mention of thiamin is made in the discussion of alcoholism besides the statement (p. 102): ". . . the proper vitamins and nourishment. . . ."

The author is apparently unaware of the photosensitization of the skin in pellagra, stating only that he has observed that patients do better in a darkened room. In addition the author's materia medica smacks of "old timey" medicine, replete with tincture of gelsemium, hypophosphites and others.

The idea of this book is good. Let us hope that these criticisms will not be true of the next edition.

R. J. M.

The Essentials of Emergency Treatment. Published by The Connecticut State Medical Journal, New Haven. 144 pages. Paper cover $1.00. Cloth $2.00.

This book, prepared under the auspices of the Connecticut State Medical Journal gives, in brief fashion, modern concepts of emergency treatment along with certain medical and surgical fundamentals on which such treatment is based. While its contents are quite applicable to problems arising in peace time practice, the book has been especially written with an eye to the needs that may arise as a result of enemy attacks on the home front. There are 19 chapters with the following titles: Introduction; The Organization and Function of the Emergency Medical Service in Connecticut; The Systemic Effect of Injury, Peripheral Circulatory Failure ("Shock"); Crush, Blast, and Anesthesia in War Emergencies; Wound Healing and Its Complications; Chemotherapy in War Wounds and Com-

pound Fractures; Blood and Blood Substitutes for Emergency Use; Emergency Field Treatment; Treatment of Wounds of Soft Tissue; Burns; Abdominal Injuries; The Treatment of Fractures; Wounds of the Thorax; Injuries of the Head, Spinal Cord and Peripheral Nerves; Injuries of the Genito-Urinary System; Injuries to the Face; Eye Injuries; Chemical Casualties; Mental Casualties.

This is an excellent book which the reviewer highly recommends to every physician, whether he be in private practice or in the armed forces.

H. B. H.

Microbes Which Help Or Destroy Us. By PAUL W. ALLEN, Ph.D., Professor of Bacteriology and Head of the Department University of Tennessee; D. FRANK HOLTMAN, Ph.D., Associate Professor of Bacteriology, University of Tennessee; and LOUISE ALLEN McBEE, M.S., Formerly Assistant in Bacteriology, University of Tennessee. St. Louis. The C. V. Mosby Company. 1941. 540 pages. With 102 text illustrations and 13 color plates. Cloth. Price $3.50.

Written for the "average layman" this book appears to be too comprehensive to be widely read. Occasional passages are subject to correction or clarification, such as p. 175 "95% of all cases of pneumonia are caused by some type or strain of the pneumococcus". No distinction is made here between lobar and bronchial pneumonia. On p. 275, speaking of rabies, the authors speak of the possibility of the etiological agent being "a protozoan organism" which is hardly acceptable with the knowledge we have available concerning this disease.

One wonders somewhat about the arrangement of chapters; chapters on virus diseases are interspersed with chapters on tularemia, scarlet fever, whooping cough and the like. It would seem advisable to have the material on virus diseases together.

J. DOUGLAS REID.

Human Pathology. By HOWARD T. KARSNER, M.D., Professor of Pathology, Western Reserve University, Cleveland, Ohio. Sixth Edition, Completely Revised and Reset. J. B. Lippincott Company. Philadelphia. 1942. xxiii-817 pages. 460 illustrations in black and white and 24 subjects in color on 16 plates. Cloth. Price $10.00.

This is the 6th edition of the standard text book of Pathology by Dr. Karsner, Professor of Pathology in the Western Reserve University. The appearance of six editions in 16 years is ample proof of its popularity and usefulness. The present edition contains several changes from the preceding edition which contribute to the usefulness of the book. The illustrations, particularly gross- and microphotographs, have been increased in number. There still remain a number of the original black and white drawings which are less than adequate by modern standards of medical illustration. A number of kymographic tracings are used in illustrating the discussions of pathological physiology. This is a commendable idea and should help to correlate Physiology and Pathology for the student.

The general plan of the text consists of a division into general pathology and special pathology. At the beginning of each major chapter there is a brief outline of the topics considered, while at the end of the chapter there is a fairly extensive bibliography arranged alphabetically by authors. The references are judiciously chosen and include both the classical papers on the subjects and the most recent contributions. Most of the references are in English and many could be read with profit by the student if time permitted. The critical evaluation of the literature on many controversial topics is excellent and should be stimulating to the student or practitioner who is not too perplexed by the lack of dogmatic statements. Dr. Karsner makes no attempt to "talk down" to the supposed level of the student. He quotes authorities for most of his statements and in cases where his personal experience is in disagreement with the authorities he states this fact.

References to recent work are well-chosen; the reviewer noted with particular interest the mention of the recent work of Schlesinger, Blumgart *et al* on myocardial infarction and that of Petersen on the relationship of climate, weather and disease. Many other citations of recent work could be mentioned. As seems inevitable with new editions, a few errors have crept in. For instance, color plate II shows two photomicrographs on which the labels obviously have been reversed. On the whole the book is a stimulating and scholarly one reflecting the broad experience and critical viewpoint of a "Pathologist's Pathologist". It can be recommended particularly to advanced students, interns, residents and physicians for critical discussions of fundamental subjects in pathology and medicine without unjustified dogmatism.

J. S. HOWE.

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VOL. 70 MARCH, 1943 No. 3

Editorials

The Office of County Coroner in Virginia

SHOULD the office of county coroner in Virginia be replaced by some more effective agency for investigating deaths in the interests of public welfare? In the near future this question will be considered by a state legislative committee. The opinions of physicians will undoubtedly be sought in deciding a problem so obviously medical. It is quite possible that many doctors have given the matter so little thought that they would be reluctant to give an opinion in the present state of their knowledge.

The matter is of sufficient importance to deserve the careful consideration of all citizens and particularly that of the medical and legal professions. It is not generally appreciated that there occur in the Commonwealth of Virginia between 4,000 and 5,000 deaths each year that require expert medical investigation in the interests of justice and public health. Let us see why this is true.

Approximately 2,500 or 10 per cent of Virginia's annual total of 25,000 deaths result from unnatural causes. Most of these represent accidents of one kind or another. Some are suicides and some homicides. The necessity of investigating such deaths in order to determine their cause and the circumstances in which they occurred is obvious. The determination of criminal responsibility or liability for damages rests on the results of the coroner's investigation. In addition to these deaths known or suspected to have resulted from mechanical or chemical injury there occur approximately 2,000 deaths each year so unexpectedly or from causes so obscure that the preservation of public safety requires them to be the subject of routine inquiries. Many of them are disclosed to have resulted from natural causes. Of those that result from natural causes some are found to be due to clinically unrecognized transmissible disease, the postmortem recognition of which constitutes an important aid to the preservation of public health. Some are disclosed by postmortem investigation to have resulted from unsuspected mechanical or

chemical injury the recognition of which is essential to the administration of criminal or civil justice.

At present the laws of Virginia fail to provide a competent mechanism for investigating deaths in the interests of public welfare. The law relating to the appointment of coroners makes no provision for the selection or retention in office of professionally competent individuals. The rate at which coroners are remunerated is so low that the public would have no right to expect a competent physician to accept the office of coroner if by chance it were tendered to him. Even though these defects were corrected, the present law is so unwisely restrictive as to when and to what extent a death may be investigated that it is virtually impossible for coroners to render effective service. The present coroner system fails to provide a workable mechanism for securing pathological and toxicological consultation incident to the investigation of medico-legal deaths. Finally the coroner should be relieved of those various quasi-judicial and non-administrative functions for which the law now holds him responsible.

At this juncture, although the reader may agree that the present system is probably undesirable, he may wonder just how much difference it makes whether the coroner's office is good or bad. Inasmuch as there have been no recent scandals involving the office is there any reason for making a change so long as the present system is tolerable?

A particularly pernicious feature of the coroner system lies in the fact that the consequences of its inadequacy are rarely made public. Although it is certainly true that deaths by homicide frequently escape recognition in Virginia it is practically impossible to prove that such is the case. The justification for such an assumption lies in the fact that in communities such as Massachusetts, New York City, New Jersey, and Maryland where effective medical examiner systems are in operation many homicides are recognized as such only because a competent mechanism exists for their recognition. It is unbelievable that such cases would be properly investigated under the system now operating in Virginia. At present the murderer who takes care that his crime is not witnessed and that he does not leave external wounds on the body of his victim stands an excellent chance to escape suspicion. Another consequence of Virginia's coroner system is that it predisposes to the criminal prosecution of innocent persons and to the recovery of undeserved civil indemnification. Where deaths are competently investigated it is found that while in many instances the circumstances of death or the appearance of the body indicate fatal accident or assault, the death was actually due to natural causes. It is obviously difficult to obtain direct information regarding the number of innocent persons in Virginia who have been prosecuted, imprisoned or rendered liable for damages because of incompetent or incomplete investigation through the coroner's office. It is likely that the number is appallingly large.

In summary it may be said that the office of county coroner in Virginia is hopelessly ineffective and that the consequences of its inefficiency are far more serious than is commonly appreciated. Since no group is as well qualified to judge the danger of the situation as is the medical profession it behooves the physicians of Virginia to exert their powerful influence in behalf of remedial legislation.

ALAN R. MORITZ, M.D.*

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*EDITOR'S NOTE: Dr. Moritz is the professor of legal medicine at Harvard Medical School; chairman of the American Medical Association's Committee to survey the relationship of law and medicine; and pathologist to the Department of Public Safety of the Commonwealth of Massachusetts. He is also editor of the *Journal of Industrial Hygiene and Toxicology.* He conducted, for the Rockefeller Foundation, a two-year study of medico-legal practice in various parts of the world. This brought him into intimate contact with legal medicine as viewed by a number of foreign countries.

Continuous Caudal Anesthesia in Obstetrics

HINGSON and EDWARDS (*Am. J. Surg.*, 57:459, 1942, *Anesth. and Analg.* 21:301, 1942, *J. A. M. A.*, 121:225, 1943) have taken a long step toward the ideal obstetric anesthesia. Before discussing their method let us briefly review the physiology of parturition and how this process is influenced by anesthetic agents. The dilatation of the cervix is effected by uterine contractions, familiarly known as first stage pains. The expulsion of the fetus is accomplished by second stage pains plus the contraction of the abdominal muscles, the diaphragm and even the auxillary respiratory muscles. The separation of the placenta is caused by uterine contractions. The expulsion of the afterbirth is brought about by uterine contractions plus the voluntary straining efforts of the patient with or without the aid of the accoucheur. These uterine contractions in civilized women are accompanied by pain, hence uterine contractions and pains are synonymous in obstetrical parlance. There is no substitute for pains in the first stage of labor. We can do much to shorten the second stage by artificial delivery, but we need the uterine contractions again in the third stage not only to cause the separation of the placenta and to help in its expulsion, but also to constrict the blood-vessels going to the placenta site so as to prevent a postpartum hemorrhage. This action must continue even after labor is complete or there will be serious hemorrhage.

Nor must the baby be lost sight of. During this time it is probably breathing amniotic fluid more or less regularly. Its oxygen is supplied from the mother's blood through the placenta. The fetal and maternal circulations are so closely associated with each other that whatever affects the mother is likely to affect the fetus. We know that fetal nervous tissue is more susceptible to morphine than mature nervous tissue, and it is probable that the same is true for various anesthetic agents. If the mother's respiration is depressed, you can expect the baby's to be so also. Likewise, asphyxia in the mother seriously affects the baby, damaging nerve tissue and also predisposing to the rupturing of intracranial blood-vessels. At birth the baby becomes an air-breathing animal, and nothing must interfere with that function either by intracranial damage or by unduly depressing the respiratory center.

The purpose of obstetric anesthesia is to block the pain sensations somewhere between the generative organs and the cortex of the cerebrum. The old-fashioned twilight sleep might be considered a subcortical nerve block. The patient had all her conditioned reflexes, and, in fact behaved as if she knew what was going on. If the dosage were correct, she was temporarily like a pithed frog in the laboratory. Unfortunately, it was hard to maintain the correct dosage. If too little of the drug were used, the pain sensations broke through the pharmacological barrage and reached the cortex. If too much were used, the force of the uterine contractions was diminished on the one hand, and the baby's respiratory center was depressed on the other hand. Furthermore, patients failed to react uniformly to the drugs. Some became excited and were hard to manage. Newer modifications such as substituting one of the barbiturates for the morphine and using a general anesthetic in the second stage of labor instead of depending on a large dose of scopolamin to control the second stage pains, have improved results, but none has proved perfect in all cases.

Subarachnoid block by means of spinal anesthesia has been used for operative deliveries with satisfaction. If the dosage is small (50 mgm. of procain) it is comparatively free from danger. The duration of the anesthesia is too short to use it for a first stage anesthetic. The anesthesia is too complete to hope for a spontaneous delivery. Rarely can the patient be made to "bear down" and so expel the baby. So far as we know, the continuous spinal anesthesia of Lemmon has not been used in obstetrics.

Epidural anesthesia at the second and third lumbar spine is theoretically safer than spinal. The negative pressure beneath the ligamentum flava is the guide to the space where the fluid is to be deposited. Being extradural, a larger dose is required, and it takes some fifteen minutes for the procain to take effect. As a safeguard against unwittingly injecting the procain subdurally, one should inject a small quantity (5 cc.) and wait five minutes. If there is no anesthesia, 25 to 30 cc. can be injected safely. The duration of the anesthesia is from thirty to forty minutes. It takes more time than a spinal anesthesia, but one is equally sure as to results. There is no risk of a drop in blood-pressure nor of a respiratory failure, nor is it followed by headache such as sometimes occurs after spinal anesthesia.

Caudal anesthesia is epidural anesthesia induced by injecting the drug into the caudal canal at the sacral-hiatus. The height in the epidural space to which the solution can be made to ascend depends on the amount used. Thirty to 40 cc. is all that is necessary in obstetrics. The disadvantage is that you have no sure guide as to when your needle is in the right place. Cases have been reported in which the sacrum was missed entirely and the needle was introduced into the baby's cranium. We have heard of another case in which the needle was introduced into the mother's rectum, the mistake being discovered when the operator made a rectal examination. Occasionally, the subdural space extends far down into the sacral canal so that it can be entered by a needle introduced at the sacral-hiatus. If the patient is on her side, spinal fluid will escape when the stylus is removed, but if the patient is in the knee-elbow position, such will not occur, as the sacrum is at the highest point of the cerebral spinal space. In the fatal case at Hopkins no spinal fluid could be aspirated with a syringe. We have had a similar experience, and had we not used the precaution recommended in epidural anesthesia, we also would have had a fatality. After 5 cc. of the solution had been injected, we had immediate and complete anesthesia. This is the real danger to all epidural anesthesia. The uncertainty of results is also a serious drawback to caudal anesthesia. Even the most experienced operators fail at times. When it works, and when it is timed properly, it is ideal for forceps delivery, repairs, and the conduct of the third stage of labor.

Finally the nerves to the vagina and the perineum can be blocked as they emerge from under the pubic arch and the perineum can be infiltrated with procain. We use this almost routinely, either in conjunction with a general anesthetic or without it when a general anesthetic is contra-indicated. It is adequate for episiotomies, low-forceps operations and spontaneous deliveries when used alone. When used along with general anesthetic, the general anesthetic can be stopped as soon as the presenting part begins to distend the vulva, so that the baby is less deeply anesthetized than it would have been had the general anesthesia been continued. The local anesthesia is adequate for the repairs, and the uterus stays more firmly contracted after the completion of the third stage.

Hingson and Edwards have adopted the continuous principle of Lemmon's spinal anesthesia to caudal nerve block, and in this way have eliminated most of the objections to caudal anesthesia. They start it early in labor when one has leisure to be sure of getting the needle into the epidural space of the caudal canal. The needle is left in place and the injections are repeated frequently enough to keep the anesthesia continuous. To overcome the danger of breaking off the needle, two techniques have been devised. Hingson and Edwards have perfected a special needle of nickloid steel with a small hub that fits into the furrow between the buttocks. To this is attached small non-compressible tubing. This minimizes the danger of breaking the needle off, an accident that has happened to other types of needles. The patient is allowed a certain

amount of freedom of motion. If she wants to turn on her back, the doctor or nurse protects the needle with his hand. Unfortunately, this needle is not on the market.

At the Mayo Clinic and at the University of Iowa they use a No. 5 ureteral catheter which is introduced into the sacral canal through a No. 13 gauge needle. When the catheter is in place, the needle is withdrawn and the metycaine or procain is injected through the catheter. The No. 13 needle causes more trauma at the site of the injection, and several of our patients have complained of it afterwards. One patient in turning back and forth dislodged the ureteral catheter from the sacral-canal until its tip was just under the skin. Another patient had a sacral-canal that was so narrow antero-posteriorly that a No. 13 gauge needle could not be introduced. Aside from the technical difficulties and the risk of inadvertently injecting the agent into the subarachnoid space, the method is physiologically perfect. There is no interference with uterine contractions. If anything, the first stage is shortened. The patient can be encouraged to bear down and so have an unaided delivery if she so desires. The baby's respiratory center is unaffected. The uterine tone is excellent; hence bleeding in the third stage and afterwards is less. It is applicable to all types of cases with the possible exception of placenta previa. It is especially indicated when the patient has toxemia and in premature deliveries.

Department of Clinical and Medical Education
of the
Medical Society of Virginia

Institute on Industrial Medicine.

In cooperation with the Committee on Industrial Health, arrangements have been made to conduct five one-day institutes on Industrial Medicine in the Tidewater area during the week of March 22. Meetings are being arranged at Newport News, Norfolk, Portsmouth, Suffolk, and Petersburg. These are to be held under the sponsorship of the following societies: Peninsula Academy of Medicine, Elizabeth City County Medical Society, Norfolk County Medical Society, Portsmouth Medical Association, Nansemond County Medical Society, and the Fourth District and Southside Virginia Medical Society.

The tentative program which is now being completed will be as follows:

Afternoon Program

INDUSTRIAL MEDICINE TODAY—Dr. C. V. Peterson, Secretary, Council on Industrial Health, American Medical Association (accepted).

COMPENSATION—Dr. H. U. Stephenson, Medical Advisor, Industrial Commission of Virginia (accepted).

TRAUMA-SHOCK AND BURNS—Dr. E. I. Evans, Associate Professor of Surgery, Medical College of Virginia (accepted), and Dr. M. J. Hoover, Fellow in Surgery, Medical College of Virginia.

INDUSTRIAL MEDICINE—Dr. W. L. Weaver, Medical Director, du Pont de Nemours Co., Ampthill Plant (invited).

TUBERCULOSIS PROGRAM IN INDUSTRY—

Dinner Program

WOMEN IN INDUSTRY—Dr. Milton Kronenberg, Director, Division of Industrial Hygiene, Illinois State Department of Health (invited).

Evening Program

DERMATOSIS—Dr. Louis Schwartz, Dermatologist, U. S. P. H. Service (invited).

CRUSHING WOUNDS OF THE FOOT—
NEW DRUGS IN TRAUMATIC SURGERY— } One or the other by representative of the U. S. Navy Medical Corps.

There will be some minor changes in the program above to meet the conditions of each locality.

This or a similar institute is available to other component societies in Virginia. If a society wishes to arrange for an institute, they should communicate with Dr. Fred J. Wampler, Chairman, Committee on Industrial Health, Medical College of Virginia, or the Executive Secretary of this Department.

GEORGE B. ZEHMER,
Executive Secretary.

Societies

Accomack County Medical Society.

At the regular quarterly meeting of this Society in January, the following were elected officers for the year: President, Dr. C. E. Critcher, New Church; vice-president, Dr. O. R. Fletcher, Sanford; and secretary-treasurer, Dr. J. C. Doughty (re-elected), Onancock.

Norfolk County Medical Society.

Dr. Charles W. Wainwright, prominent internist of Baltimore, was the guest speaker before this society on the evening of February 15th, his subject being "Arthritis". Dr. A. Brownley Hodges and Dr. Lockburn B. Scott, both of Norfolk, are president and secretary of the society, respectively.

Richmond Academy of Medicine.

The regular meeting of the Academy on February the 9th was held under the presidency of Dr. A. S. Brinkley and an interesting program was presented as follows by several doctors connected with 45th General Hospital stationed at Camp Lee:

Introduction—J. Powell Williams, Lt.-Col., M.C.
Marching Feet—R. Campbell Manson, Capt., M.C.
March Fractures—George A. Duncan, Maj., M.C.
Psychiatry in the Army—Andrew D. Hart, Maj., M.C.
Neurological Complications of Injuries About the Face—James L. Thomson, Capt., M.C.
Cardiovascular Disease in the Army—M. Morris Pinckney, Maj., M.C.
Pilonidal Cysts—Guy W. Horsley, Maj., M.C.

Following the meeting, refreshments were served in the dining room.

The Virginia Peninsula Academy of Medicine.

The membership of which includes doctors of the counties in the peninsula between the James and York Rivers, has prepared interesting programs for its meetings which are held on third Mondays, monthly. Dr. W. A. Colton of the Veterans Administration Facility at Kecoughtan is president and Dr. Harvey G. Bland of Newport News secretary.

Warwick County Medical Society.

New officers of the Warwick County Medical Society for 1943 are Dr. Paul Hogg, President; Dr. Thomas Hunnicutt, Vice-President, and Dr. David Blechman, Secretary-Treasurer. All are of Newport News.

News

The Medical Society of Virginia to Meet Again in Roanoke.

Following the decision of the House of Delegates that there should be a meeting of the Society in 1943, it was voted that the selection of the place and dates should be left to the Council at its winter meeting. Owing to crowded conditions of hotels in the eastern section of the State, this body, at its recent meeting, named Roanoke as this year's convention city and the local doctors have consented to help in any way possible to make this a success. Headquarters will be at Hotel Roanoke, and the dates selected are October 25, 26 and 27.

American College of Surgeons.

A series of twenty War Sessions, beginning March 1, will be held throughout the United States under the sponsorship of the American College of Surgeons with the cooperation of other medical organizations and of the Federal medical services. Each session will consist of an all-day program from 9:00 A. M. to 10:00 P. M., including luncheon and dinner conferences. Speakers of national prominence will discuss new developments in military, civilian medical and hospital service. There will be no geographic restriction on attendance, but the session for Virginia, District of Columbia and Maryland will be held in Richmond, at John Marshall Hotel, on Friday, March the 19th. A list of the other sessions and places of meeting may be secured from the American College of Surgeons, 40 East Erie Street, Chicago.

Medical College of Virginia News.

Commencement exercises closing the one hundred fifth session will be held at The Mosque on March 20 at eight o'clock. Governor Colgate W. Darden will be the speaker. It is anticipated the graduat-

ing class will number one hundred fifty-two; 71 in medicine; 26 in dentistry; 18 in pharmacy; 37 in nursing. Dr. Samuel Chiles Mitchell, Professor of History, University of Richmond, will be awarded the honorary degree of doctor of letters at the exercises. Dr. Mitchell was president of the Medical College of Virginia the year the old University College of Medicine was consolidated with the Medical College of Virginia, 1913-14. The final exercises have been confined to one day this session.

The annual Stuart McGuire lectures were held February 25-26, with the postgraduate clinics on the 26th, the subject of the clinics being low back pain. Dr. Philip D. Wilson, Clinical Professor of Orthopedics, Columbia University, College of Physicians and Surgeons, gave the two McGuire lectures.

Dr. William Mann, director of the zoological park, Washington, D. C., on January 25 gave a lecture on poisonous reptiles, this being one lecture of the series on war medicine.

Dr. P. N. Pastore, professor of otology, rhinology, and laryngology, spoke to the Richmond Society of ear, nose, and throat physicians on "The Effect of Sudden Atmospheric Changes on the Ear" recently.

Dr. H. H. Ware, Jr., professor of obstetrics, attended the annual meeting of the American Association for Planned Parenthood in New York.

Dr. William B. Porter, professor of medicine, has been made a member of the Board of Directors of the American Heart Association.

Dr. Walter E. Vest and Dr. R. J. Wilkinson of Huntington, W. Va., were recent college visitors.

Dr. Lynn D. Abbott has been promoted to assistant professor of biochemistry and Dr. Tyler Haynes to professor of orthodontia for the year beginning July 1, 1943, college appointments being made on a fiscal year basis.

Dr. Claude L. Neale has been appointed an assistant professor of psychiatry to fill the vacancy of Dr. Patrick H. Drewry, Jr., who is now serving with the armed forces.

News from the University of Virginia, Department of Medicine.

Dr. Eugene R. Kellerberger of New York, representing the American Mission to Lepers, showed motion pictures of "An Agricultural Leper Colony in Africa" and of "African Sleeping Sickness" on January 15th.

On January 20th, Dr. James A. Waddell spoke at the James River Medical Society on the subject of "Hemorrhages in the Newborn".

A lecture on "Continuous Caudal Anesthesia in Obstetrics" was given by Dr. Waldo B. Edwards and Dr. Robert A. Hingson of the United States Public Health Service on February 8th.

Dr. Robert DuVal Jones, Jr.

Has taken offices at 300 Wainwright Building, Norfolk, where he will resume the practice of surgery after several months' absence due to illness.

West Virginia State Medical Association.

The 76th Annual Meeting of this Association will be held at the Daniel Boone Hotel, Charleston, May 17-18. Due to war conditions, the usual formal banquet and ball have been dispensed with, but full scientific programs will be presented during the two-day meeting.

Award for Research on Alcoholism.

An announcement of a $1,000 award for outstanding research on alcoholism during 1943 has been made by the Research Council on Problems of Alcohol. The research must contribute new knowledge in some branch of medicine, biology, or sociology, important to the understanding or prevention or treatment of alcoholism, and any scientist in the United States, Canada, or Latin America is eligible. Full information may be obtained from The Director, The Research Council on Problems of Alcohol, Pondfield Road West, Bronxville, New York.

"Doctors at War".

The American Medical Association and the National Broadcasting Company, in official cooperation with the United States Army Medical Department and the United States Navy Bureau of Medicine and Surgery, will present over the NBC hookup a radio drama entitled "Doctors at War". This began on December 26th at 5:00 P.M., E.W.T., and will be continued for twenty-six weeks, being broadcast on each Saturday at the same time.

Our Men Need Books.

The 1943 Victory Book Campaign has been undertaken at the request of the armed forces and has

been approved by the Office of War Information. Good books—popular and technical—are wanted for men in all branches of the service, for the education and enjoyment of the soldiers, sailors and marines. Each reader is asked to leave such books as he can give at his nearest collection center or public library.

Dr. Louis Perlin

Announces that he is now located at 2920 Park Avenue, Richmond, for the general practice of medicine.

The Virginia State Board of Medical Examiners

Will hold its next examinations in Richmond, March 24-27, and applications must be complete in the hands of the secretary, Dr. J. W. Preston of Roanoke, at least ten days in advance of examinations. The change from June to March for the Spring examinations has been made to meet the needs of those graduating from Virginia and other medical schools at a much earlier date this year than usual.

Connected With Red Cross Work in Virginia.

Announcement has been made of the appointment of John F. Busch, M.D., as Director of Medical and Health Service for the Eastern Area of the American Red Cross with headquarters in Alexandria. Virginia is included in this area. Dr. Busch, formerly a general practitioner in Spartanburg, S. C., came to the Red Cross work from the Georgia State Department of Public Health where, since 1937, he was associated with the Division of Tuberculosis Control.

Dr. Robert V. Funsten,

Professor of orthopedics at the University of Virginia, was guest speaker before the Augusta County Medical Association at its meeting early in February, his subject being the "Kenny Treatment".

Dr. William R. Weisiger,

Richmond, has been elected grand master of the Grand Lodge, Ancient Free and Accepted Masons of the Commonwealth of Virginia.

Dr. R. S. Griffith, Waynesboro, has been elected grand senior steward.

The American Board of Ophthalmology

Announces that its 1943 examinations will be held in New York City on June 4th and 5th, and in Chicago on October 8th and 9th. Candidates will be required to appear for examination on two successive days. Formal application blanks should be secured at once from Dr. John Green, secretary, 6830 Waterman Avenue, St. Louis, Mo.

"The Foundation Prize"

Of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons will be awarded again this year. This is an award of $150.00 and eligible contestants shall include only interns, residents, or graduate students in obstetrics, gynecology or abdominal surgery, and physicians with an M. D. degree who are actively practicing or teaching these subjects. Manuscripts must be presented under a nom-de-plume and be limited to 5,000 words and must be in the hands of the secretary before June 1st. Full information about this award may be obtained from James R. Bloss, M.D., Secretary, 418 Eleventh Street, Huntington, W. Va.

Married.

Dr. James Walter Choate, Jr., Salisbury, N. C., and Miss Margaret Imogean Thorn, Hattiesburg, Miss., February 17th. Dr. Choate is a graduate of the Medical College of Virginia, class of 1942, and is now serving his internship at the Hospital of St. Vincent de Paul in Norfolk.

Nutrition in War Time.

The following is the program of a Nutrition Symposium to be held in the Simon Baruch Auditorium, Egyptian Building, of the Medical College of Virginia on March 25, 26 and 27:

THURSDAY, MARCH 25

8:00 P. M.—Nutrition Plans of the State Department of Health—Dr. I. C. Riggin, Commissioner of Health, State of Virginia.

Introduced by Governor Colgate W. Darden, Jr.

Nutrition in a Changing World—Dr. W. H. Sebrell, National Institute of Health.

FRIDAY, MARCH 26

9:30 A. M.—Making Nutrition Vital—Dr. Lydia J. Roberts—University of Chicago.

Victory Gardens as Related to War Time Nutrition in Virginia—Mr. L. B. Dietrick, Chairman, State Victory Garden Committee—Virginia Polytechnic Institute.

2:00 P. M.—Rationing as It Affects Nutrition of the Public—Dr. V. P. Sydenstricker—University of Georgia.

Living Under Rationing—Washington O. P. A. Representative.

7:00 P. M.—Dinner meeting—Banquet—1943 Ration Style War Time Nutrition in England—Dr. V. P. Sydenstricker—University of Georgia.

SATURDAY, MARCH 27

9:30 A. M.—Panel Discussion

Teaching Nutrition Material to Elementary School Children—Dr. Lydia J. Roberts and Miss Bertlyn Bosley.

Discussion opened by:

Dr. W. T. Sanger, President Medical College of Virginia and Chairman, State Nutrition Committee.

Miss Janet Cameron—V.P.I. Food Nutrition Specialist.

Miss Eleanor Enright—Regional Nutritional Representative, Office of Defense Health and Welfar Services, FSA.

Dr. Sidney S. Negus, Professor of Biochemistry, Medical College of Virginia.

Mrs. Luna L. Willis, Executive Secretary, Virginia Nutrition Committee.

Miss Marguerite L. Pettee, Chief Nutritionist, Medical College of Virginia Clinics.

The Fifteenth Anniversary Number of the Hebrew Medical Journal,

A semi-annual, bi-lingual publication edited by Moses Einhorn, M.D., which appeared recently is dedicated to a symposium on Peripheral Vascular Diseases.

Contributors to the symposium are Dr. Leo Buerger who has written an editorial on "Peripheral Vascular Disease in Retrospect"; Dr. William Bierman, "Physical Therapy in Peripheral Vascular Disease"; Dr. Charles F. Bolduan, "Some Data on the Prevalance of Diseases of the Peripheral Vascular System"; Dr. William S. Collens, "Arteriosclerosis Obliterans"; Dr. Aaron Dubnove, "The Role of Vitamins in the Etiology and Treatment of Peripheral Vascular Diseases"; Dr. Charles Goodman, "Thrombo-Angiitis Obliterans and Typhus Fever"; Dr. David W. Kramer, "Gangrene of the Lower Extremeties: Consideration of and Differential Diagnosis"; Dr. Samuel Silbert, "Treatment of Thrombo-Angiitis Obliterans". In addition there are several sections covering a variety of related subjects, such as Medicine in the Bible and in the Talmud, analysis of medieval medical manuscripts, Palestine and health, etc.

All of the original articles appear both in English and in Hebrew. The address of the Journal is 983 Park Avenue, New York City.

Obituaries

Dr. Marshall John Payne,

Prominent and popular surgeon of Staunton, died of a heart attack on February the 11th. He was a native of Orange County and seventy-one years of age. Dr. Payne received his education at the University of Virginia and Jefferson Medical College, Philadelphia, graduating from the latter in 1893. After a short time he moved to Staunton, where he had since made his home. Dr. Payne became a member of the Medical Society of Virginia soon after entering the profession and had taken an active part in its work, having served as one of its councilors and a former vice-president. He was a past president of the Association of Surgeons of the Norfolk and Western and of the Chesapeake and Ohio Railways, and also of the Augusta County Medical Association and the Medical Society of the Valley of Virginia. In addition, he held membership in several national medical associations. Dr. Payne was one of the organizers and first president of the Staunton Rotary Club, a Shriner, and took an active part in the civic and religious life of his community. His wife and a son survive him.

Dr. J. Richard Williams,

Retired physician of Richmond, died February 18th. He was a native of this city and sixty-seven years of age. Dr. Williams graduated from the Medical College of Virginia in 1898 and joined the Medical Society of Virginia that year. He was for fifteen years a member of the adjunct faculty of the College and was a member of the Richmond Academy of Medicine. Two sisters survive him.

Dr. Saevy Highsmith

Of Fayetteville, N. C., died December the 8th as the result of heart disease. He was a graduate of the former University College of Medicine of Richmond in 1901, and had always taken an active part in the professional life of his state. He was formerly a co-owner of the Cumberland General Hospital and later on the staff of the Highsmith Hospital, where he died.

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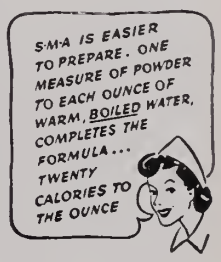

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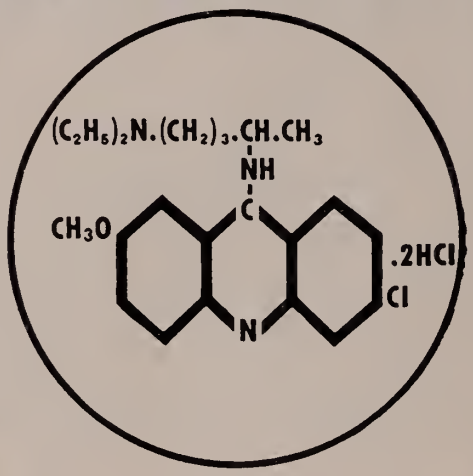

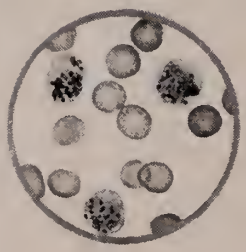

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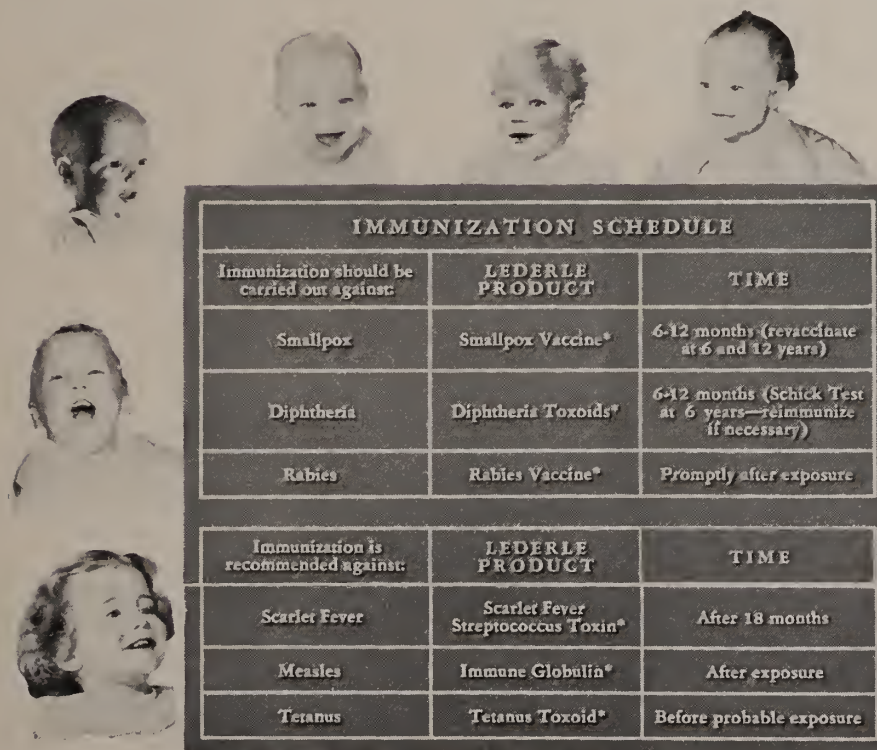

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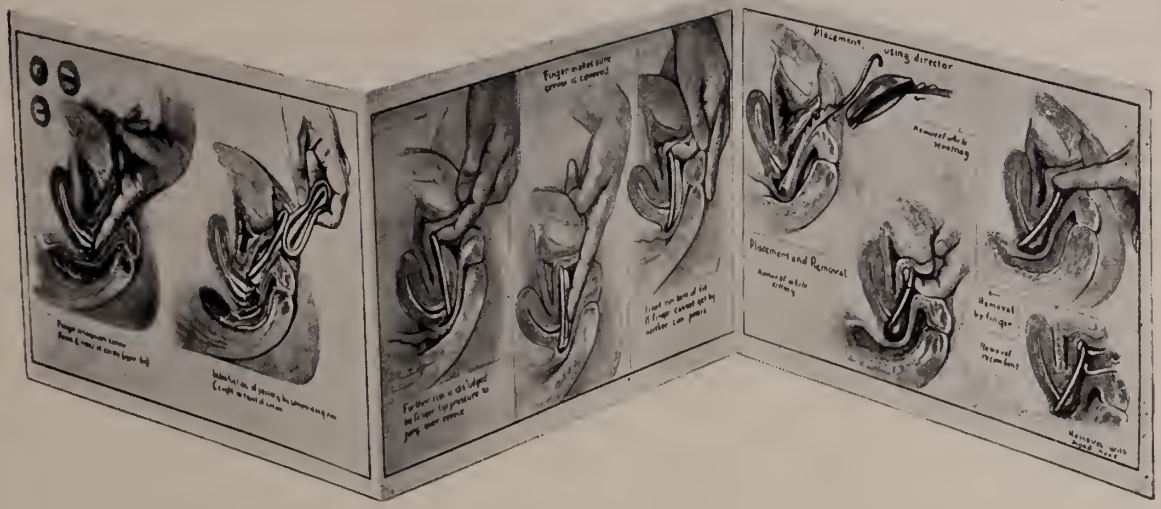

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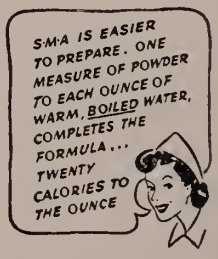

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Guest Editorial

The Virginias and Medical Education

IT NOW seems proper to comment upon the effective efforts of West Virginia to further solve its problems of medical education and the relation of this effort to the State of Virginia.

Based upon a comprehensive report of a committee of the West Virginia State Medical Association, of which the dean of West Virginia University medical school was a member, decision was reached that this is not the time to develop a four-year medical school in West Virginia; that, however, the program of the present two-year medical school at Morgantown devoted to the medical sciences should be further strengthened wherever practicable and arrangements made with some four-year medical school to receive West Virginia graduates in the medical sciences on a voluntary basis for the completion of their work, this arrangement to be subsidized by West Virginia University.

This recommendation was duly accepted by the authorities of West Virginia University, by the Governor of the State, and by the profession generally. An enabling act to make legal this proposal has been unanimously adopted by the West Virginia legislature which has also provided funds appropriate to the consummation of the project.

Meanwhile, the authorities of West Virginia University, backed by representatives of the State Medical Association, have been negotiating with the Medical College of Virginia with a view to working out arrangements for the transfer of some fifteen to twenty medical students annually to Richmond for the last two years of their instruction. This would add a total of from thirty to forty students per year after the first year to the third and fourth-year classes of the school of medicine at the Medical College of Virginia, whose total matriculation would still be less than a decade or more ago. The subsidy paid by West Virginia University and student fees would add something like $40,000 or $50,000 a year for instructional purposes in the clinical years of the medical course. Further, this proposal would not reduce the number of students from Virginia which can be accepted by the school of medicine of the college.

Since the first discussions regarding this new venture began many have been consulted, including the Governor of Virginia and other State officials, the Board of

Visitors, faculty, alumni council, officers of the Council on Medical Education and Hospitals of the American Medical Association, officials of the Rockefeller Foundation, and many other leaders in education and medical education. Interestingly enough, the reaction in favor of this cooperative plan has been practically unanimous. Many have referred to it as pioneering of great moment and as a pattern for the solution of the two-year medical school problem. Others see in it a method of solving certain other issues, not all of them educational necessarily, which can be effected more soundly on an inter-state basis than on an intra-state basis. Some say that states increasingly must undertake joint action in the interest of economy and quality of results. Certain it is that many implications of far-reaching significance can be pointed to here.

To summarize, some of the advantages of cooperation between the two Virginias are: medical education in West Virginia can go forward in an approved manner and at reasonable cost; the cooperative arrangement will enlarge the constituency of the Medical College of Virginia by adding West Virginia and will make Richmond increasingly a medical centre for that State, which already has more physicians who are graduates of the Medical College of Virginia than of any other institution; the plan will call for no capital outlays and will not reduce the number of students which either institution now accepts; the increased revenues of each institution will permit strengthening teaching staffs; diplomas of West Virginia students will set forth the procedure followed in their education and will be attested to by certain individuals at each institution; the closest possible cooperation between the two schools will be developed in relation to curriculum organization, in promotion of students at Morgantown to Richmond and their subsequent graduation, and in the general welfare of each institution. If successful, a pattern for joint action by states will be demonstrated.

This program is tentatively scheduled to go into operation January, 1944. A formal contract between the participating medical schools remains to be approved and executed. Many of the details involved have already been carefully considered at length.

W. T. SANGER,
President, Medical College of Virginia.

EDITOR'S NOTE: Dr. Sanger is known to most of our readers and needs no introduction.

Floral Eponym (2)

The Partridge-berry, or Twinberry, Metchella repens, is named for Dr. John Mitchell, 1680?-1768. Dr. Mitchell was born and educated in England. He came to America about 1700 and settled in Urbanna, where he became interested in everything in his new surroundings. He wrote on botany, electricity, yellow fever, politics and published a map of the French and British dominions in America. He returned to London about 1747 and became a Fellow of the Royal Society.

TREATMENT OF THE MENTAL DISEASES RELATED TO THE INVOLUTIONAL PERIOD*

DAVID C. WILSON, M.D.,
University of Virginia,
Charlottesville, Virginia.

Shock therapy has become established as a form of treatment of the mentally ill. The first enthusiasm for the insulin cure of schizophrenia has waned until now this method of treatment is not looked upon as a cure-all, but a definite adjunct in psychotherapy. The use of insulin is confined mainly to early cases of dementia praecox or in the more chronic cases, in an effort to make them amenable to psychotherapy.

Convulsion therapy was first used in cases of dementia praecox also, but in 1936 and 1937 it was found that the metrazol-produced convulsion brought great relief in a large percentage of depressed patients, especially in those with the irregular or mixed depressions. In October, 1938, before this Society the writer reported the results of metrazol-produced convulsions on twenty patients. These patients had all been discharged and at least three months after discharge it was found that fourteen of the twenty were greatly improved or well at that time.

Since 1938 convulsive therapy, as well as insulin therapy, has been continued at the University Hospital. The insulin shocks, however, are rarely used in the affective disorders unless the patient is so distressed or so active that the sedative effect of the insulin is needed. Through 1938 and 1939 metrazol was used with good results as far as the personality reaction was concerned, but this drug was found to be especially dangerous because of its side effects; hence, in December, 1939, electro-shock was substituted for metrazol as a convulsive agent.

The present routine for shock therapy at the University Hospital is to use insulin in cases of schizophrenia that have not passed into the chronic form; to use insulin plus electro-shock in some few of the chronic schizophrenics, while in the affective disorders electro-shock is used. In the aged or in others in whom there are physical complications curare is used to soften the effect of the convulsion.

The present study is a report on the effect of convulsive therapy on a special type of disorder. This form of personality reaction is variously known as mixed depression, agitated depression, or as involutional melancholia. It is characterized by feelings of unworthiness, leading on to ideas of guilt. There is often hopelessness, indeed, an active denial of any hope. There is sadness, especially in the morning, with loss of appetite and insomnia. Accompanying these disturbances of thought and behavior increased motor activity prevails. This is first manifested by hypermotility of the gastro-intestinal tract with diarrhea or constipation, pylorospasm and then of the cardiovascular apparatus with flushing and rapid heart. Following these many psychosomatic disturbances comes the great restlessness of the whole body with walking to and fro or constant churning, as it were, of some physical activity.

This type of behavior occurs as a rule in persons who have never been secure. They are over-conscientious, meticulous as to detail, determined to do things right; an attitude, based on a fear of criticism, which leads to worry and anxiety if any failure threatens their correctness. The history will show one or two depressions previously, but, as a rule, nothing of a serious nature. The story differs markedly from that of the manic depressive, either of the cyclic form or of the recurrent depressive type. These attacks of agitated depression are most common at climacteric but may occur at any age, certainly from the third decade on. The illness is most trying as the suffering surmounts that experienced in any other disease. The duration in untreated cases will average approximately a year, but frequently the depression continues for two to four years. The older the patient the longer the sickness continues and the less likely the sufferers are to recover. This type of disorder from the point of view of immediate results seems to respond best to convulsive therapy; indeed, the shock is practically a specific for this syndrome. The late results, that is results months and years afterwards, have not been told, so as yet the ultimate value of the therapy in contrast to its risks has not been determined.

The present study is based on a review of all the cases with the agitated depression syndrome that were treated by shock at the University Hospital.

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 5-7, 1942.

All the records of patients receiving shock therapy were reviewed so that only those who presented this one definite syndrome would be considered. Cases of recurrent depression, cases that showed signs of a manic swing, and cases whose prepsychotic make-up cast suspicion on the diagnosis were all eliminated. No case admitted since January, 1942, was included, as an effort was made to get results at least six months after discharge.

TABLE No. I

Total Number	106
Men	37
Women	69
Oldest Man	74
Oldest Woman	71
Majority of Men	50—60
Majority of Women	40—50
Average Hospital Stay	42-29 days
Discharged As Improved	75—70%

This gave a grand total of 106 cases of agitated depression treated by shock therapy. There were sixty-nine women and thirty-seven men. The youngest man was twenty-seven years of age, the youngest woman twenty-nine. The majority of the male cases were in the fifth decade, and the oldest man treated was seventy-four. There were twenty-one women in their forties and twenty-two in the fifties. The oldest woman was seventy-one. There were eight men in their sixties and eleven women. The average age of the men was fifty-three and of women forty-nine. We interpret these findings as follows: namely, that the climacteric in women tends to bring feelings of failure to them at an earlier age than does the aging process in men. The presence of a male climacteric in the fifth decade might be discussed, but it seems best to leave that discussion to others. Certainly it is true that some people grow old in the late twenties and early thirties, while others do not feel TIME's handicap until well into the sixties, so it is preferable to speak of the aging process as the cause of the more or less unconscious feeling of insecurity which produces the behavior pattern under discussion and to consider the climacteric as an added strain which often precipitates the reaction.

The immediate response to convulsive shock in this disease is most gratifying. Some cases respond after one, some after ten or more shocks, but as a rule five or six grand mal convulsions produce a reversal of the syndrome. The pathetic, agonizing wretch becomes an active somewhat elated individual whose one idea is to return home and to work. Of the 106 persons treated seventy-five were discharged from the hospital as improved. This improvement as a rule is quite marked. The course in the hospital follows similar lines in the majority of cases. After admission it takes ten days to two weeks to examine the patient carefully and to decide that shock is indicated; then, period of shock usually lasts three to four weeks; then, after the reaction is reversed, every effort is made to keep the patient for ten days to two weeks longer so that immediate relapse can be prevented. However, the patient feels so well and the relatives exert so much pressure it is difficult to prevent departure. The average number of hospital days, used by the series of 106 patients, was forty-two days or exactly six weeks. The untreated case with this syndrome is hospitalized for at least three months, so that this rapid turnover of a little over a month has many things in its favor.

Ten of the cases were treated with insulin alone, thirteen with metrazol and insulin, forty-three with metrazol alone and thirty-eight with electro-shock. It is interesting to note that all the cases treated with electro-shock were discharged as improved, while insulin has the lowest rate of improvement and the metrazol therapy shows improvement in thirty-nine out of forty-three treated. The electro-shock undoubtedly is much to be preferred to the other two forms of therapy, not only because of its immediate results but because of the absence of complications such as broken bones and other body injuries which so often followed the metrazol convulsions.

TABLE II

Total Number	106
Follow Up	64
Well	32—50%
Definitely Improved	52—81%
Relapsed	13
Committed	10
Suicides	3

From time to time during the last three years efforts have been made to keep in contact with this group of patients, but like all attempts at follow-up, the results have fallen far below our hopes. Sixty-four patients have been contacted since discharge, but the majority of contacts were made during the last year. None of the admissions of 1942 are considered in this series; therefore, the interval between discharge and last report is at least three or four months, if not one or two years. The average

duration of the follow-up interval was 14.3 months.

Thirty-two of the sixty-four reporting are to all appearances well. They are going on with their lives in a normal fashion. Twenty others are definitely improved. There are then fifty-two of the sixty-four definitely improved or well. This is an improvement in 81 per cent of the cases followed up. Thirteen cases relapsed and returned for further treatment; ten were committed to State Hospitals; three have committed suicide since discharge. There are forty-two other cases still to be heard from, but from our past experience it can be concluded that we are more likely to hear from the bad than the good result, as they usually seek some other physician. Therefore, we can feel that at least half of the remaining patients not heard from are improved. Thus our percentage of eighty-one for the whole group is justified. In this regard it is worthwhile to quote from the text-book of Strecker and Ebaugh, the 1940 Edition, "Involutional Melancholia is lengthy in duration—a course of eighteen months is not uncommon—the recovery rate is about 23 per cent to 40 per cent; the mortality by suicide and intercurrent disease about 20 per cent; 25 per cent to 32 per cent become chronic. After the age of fifty-five, or if there are advanced senile changes, the outlook is gloomy."

If we were to consider only the cases that are known to be well, ignoring those improved, then 50 per cent have recovered, and shock therapy would be worth while, but when we add to this the short period of hospitalization, the definite immediate improvement, which at least gives temporary relief and, finally, that convulsive therapy improves the aged as well as the young, regardless of physical status, the great value of this form of treatment is most impressive.

The agitated depression in the aged, the agitated senile so-called, has been considered the most hopeless and helpless of all sufferers. Such patients were a terrible sight to relatives and loved ones and a terrific strain on the doctor or attendant who was responsible for their care. Now this is all changed. This reaction to failing soma can be attacked and reversed, bringing relief with peace to all concerned. It is true that the dreaded relapse occurs, but, again, the reaction can be reversed, so restoring quiet for another period of six months or a year.

Mr. C—, a sixty-four year old farmer, was in the hospital for forty-one days. He was discharged and returned to work; came back seven months later, was in the hospital twenty-eight days and has now been out three months. Mrs. C—, sixty-one years of age, has had two visits eight months apart and is now home apparently well. Mrs. G—, sixty-eight, has had three visits and is now back on her farm at work. These patients were seriously ill, so ill that there can be no doubt that without shock therapy they would have suffered from a continuous illness, but now they are able to return home apparently well and to remain there many months. Each time they return they are older and it is to be expected that the free interval will be shorter, but, even so, there can be little doubt that the therapy is justified. If curare is used to lessen the muscle contractions during convulsion there is little danger of complications. Cerebral accidents are to be considered in the markedly arteriosclerotic. Undoubtedly there are many contra-indications, but shock therapy has placed a bright new day in the calendar of the psychiatric care of the aged.

Finally, a review of 106 cases of agitated depression is presented and a follow-up in sixty-four is reported. Fifty per cent were well, 81 per cent definitely improved several months after discharge. Convulsive therapy is apparently a specific for the agitated depressed reaction, whether in the young, the aged, the paretic, the diabetic or the senile. Electro-shock is the method of choice at present, but should be used with curare and curare-like acting substances in those whose physical stamina is limited. This is a small series, an incomplete follow-up, and, yet, time is too short to determine the ultimate value of the therapy. However, the results are encouraging enough to warrant continued use of this procedure until a better one is offered.

DISCUSSION

DR. BEVERLEY R. TUCKER, Richmond: Dr. Wilson has presented a very enlightening paper on a new subject in a splendid way. The subject of geriatrics has been neglected, although it is possibly as important as the subject of pediatrics. In the cases that we have treated I have taken a different basis for the statistics from Dr. Wilson's, so they will not coincide completely, yet on the whole the similarity is remarkable. I excluded all cases under forty and included only those agitated cases over forty. So that brought us down to nineteen cases, all of which we called involutional melancholia or involutional agitated depression. Just what is involution is rather difficult to determine, if you look at the text-books. Roughly, the involutional period is that period in which adulthood is changing into senescence. There-

fore, we took the periods from forty to fifty, from fifty to sixty, and from sixty to seventy as the involutional period. There were no cases over seventy and no cases in which attacks occurred previous to forty years of age. Involution is connected with menopause in women and men have change of life too. I think the tired American business man is, in a way, undergoing a change of life. Therefore "the dangerous age" is an involutional change. It is a pity that some of them are not tired and do not stay tired, for they might be less dangerous.

We have to select these cases very carefully; and none of these treatments, although the greatest contribution to psychiatric medicine I know of, should be slapped down on great numbers of cases without the careful investigation Dr. Wilson has stressed. We have to consider cerebral arteriosclerosis and certain thyroid states. I can recall, also mild acromegaly which resembled depression. Then there are situation psychoses, in which something terrible happens and the individual, during this involutional period, gets depressed or agitated, yet it is not caused by the involution but by the outside happening.

I was glad to hear Dr. Wilson say that he kept these cases ten days or more and examined them thoroughly before giving shock treatment. I agree with him that electric shock is the treatment of choice in chronic agitated depression. Insulin is the treatment of choice in schizophrenic cases. Then we have metrazol and also have lobectomy. So we have a choice of different methods of treatment.

In this restricted group under discussion we had nineteen cases. Eleven of them made what we call recovery and two of them a great improvement. Four of them made moderate improvement, and two of them were slightly improved. None of them were made worse. In our series of nineteen cases, seventeen were females and two males. Six occurred in the fourth decade, eleven in the fifth decade, and two in the sixth decade. I noticed that Dr. Wilson's also were mostly in the fifth decade.

Another important thing is that these cases did not need a great number of treatments. We have found out that very frequently an amnesia period that does not bring a convulsion is helpful. In this series we had two that had only amnesia treatments but had a good many periods of them. The improved cases averaged about seven convulsions and six amnesia treatments but some of them got well on one or two convulsions. We considered 68.4 per cent recovered or greatly improved. In this amnesia period is a great chance for accessibility in which one can use psychotherapy, which all of us feel is valuable. The mortality in electric shock is almost nil. I recently saw a report of 7,676 cases—not treatments but cases, and the mortality was only .05 per cent. If there was an average of five or ten treatments to a case, that would be a great number of treatments. I have not seen any cases injured by it.

To soften the convulsion curare has been used, especially in the metrazol treatment. In our cases sodium amytal proved very useful. It renders going into the treatment easier and makes the patient more comfortable. Sodium amytal does not seem to prevent the convulsion at all but makes the patient more comfortable. Paraldehyde I think might be used.

We should be careful not to mix our cases too much. We have seen reports in which lifelong manic-depressive cases have been included and also schizophrenic cases. I think if we separate them the reports would be more valuable.

I certainly want to congratulate Dr. Wilson on his paper. I think it was excellent.

DR. JAMES P. KING, Radford: I should like to ask Dr. Wilson what complication he has encountered as the result of electric shock.

DR. WILSON, closing the discussion: I thank Dr. Tucker for his addition to the paper and his discussion of it.

I do feel that there are a good many contra-indications. I think we have the idea of treating a reaction here, and it does not make much difference in what degree of seriousness it is manifest. If a person is able to stand the shock, then we should treat the agitation and depression. In other words, I apply it especially to the senile. We have shocked some patients that had definite atrophy of the cortex, with a good deal of memory loss and other sensorium changes. Often in apparently deteriorated, senile persons, when the agitated depressed reaction was taken away, this senile individual was found to be much more capable in many ways. The brain changes cannot be cured, but we can change the reaction.

The contra-indications are mainly of the cardiovascular apparatus, I believe, although arteriosclerosis should certainly be considered.

We have not had as much success with the petit mal reaction as mentioned by Dr. Tucker. Unless we get a grand mal convulsion, we do not get the reversal that we like. Some cases are helped by it, but they are rare. We have not used the sodium amytal before treatment, as Dr. Tucker has suggested. We have found that any sedative may prevent the necessary response.

I do think that another contra-indication to electroshock is the psychoneurotic reaction types. Shock therapy does not help the psychoneurotic, so it is necessary to be very careful to distinguish between the psychoneurotic and involutional depression.

In the metrazol cases we did not x-ray all our patients, but we did get a good many crushed vertebrae. In the follow-up those cases were quite interesting. They had fractures of the bodies of the vertebrae four or five years ago. Now we find that a great many of them have pain in the back or pains around the chest, but they are practically well and are working only slightly handicapped by pains and aches.

We have not had any cerebral accidents. We have had some severe amnesias that have lasted long enough to cause worry, but all of them have disappeared. None have lasted over a week. Usually the amnesia does not last over two hours.

CARDIO-DIAPHRAGMATIC SYNDROME*

WILLIAM B. PORTER, M.D.,
Richmond, Virginia.

One is not justified in presenting a purely clinical paper unless one is describing a previously unrecognized clinical entity or is broadening the implications of a commonly observed symptom. Thoracic pain referred to the areas supplied by the upper six dorsal segments, third to the eighth cervical and the left phrenic nerves is a not unusual subjective complaint; yet it is rarely appreciated how often the explanation of these annoying and severe symptoms are not to be found in diseases of the heart and aorta.

This discussion is concerned with a group of patients who have symptoms definitely suggestive of angina pectoris, but in whom the syndrome results, not from heart disease, but from disturbed function or defects of the diaphragm. For the purposes of clinical orientation, the term cardio-diaphragmatic syndrome is suggested.

In 1936 the author[1] reported studies on a patient who had grossly disturbed function of the diaphragm and symptoms significantly like those of angina pectoris. The functional disturbance of the diaphragm consisted of paroxysmal attacks of rapid and ryhthmic contractions graphically recorded at a rate of 300+ per minute. The symptoms were relieved by novocaine block of the phrenic nerve which resulted in a paralysis of the diaphragm on the injected side with cessation of diaphragmatic flutter. This case is of peculiar interest for it was the first recorded instance of a syndrome simulating angina pectoris which could be definitely related to a gross disturbance of diaphragmatic function.

Instances of this type are probably rare, yet less dramatic episodes of precordial oppression with shoulder and left arm pain occur with considerable frequency in patients who have gastric and colonic disease. The symptoms are apparently produced through distention of these organs by entrapped gas which interferes with the function of the left diaphragm.

Winkler, in 1933,[2] presented convincing evidence for a syndrome which he named "angina diaphragmatica". His theme was that there is a clinical entity unequovically related to disturbed function of the diaphragm which is difficult to differentiate from the angina of coronary artery disease. In this report he refers to many cases observed by others in support of his thesis. A critical review of his paper, coupled with one's experience with patients having chest pain and substernal oppression, forces the conclusion that he is justified in his premise and patients do have subjective symptoms referred to the areas usually affected in angina pectoris and that the symptoms are caused not by heart disease, but by gastro-intestinal disturbances which modify the function of the left diaphragm.

Our interest has been even more intrigued by those patients who have symptoms quite typical of angina pectoris associated with hiatus esophageal hernia.

Hedblom, in 1925,[3] discussing symptomatology in 378 patients, mentioned only 87 with thoracic symptoms; of these, only 19 had pain in the thorax and palpitation, and 2 had pain in the left shoulder. On the other hand, Jones,[4] in a review of his own cases, found in 91 patients with small hernias 34 who had substernal pain; and in 37 with large hernias, only 5 had substernal pain. To further emphasize the futility of attempting to answer the question of how frequent is a syndrome closely simulating angina pectoris produced by hiatus hernias, my recent personal experience is significant. Of the last 11 patients referred with a provisional diagnosis of angina pectoris, three had hiatus hernia and essentially normal hearts. On the other hand, the last three patients seen with a previously diagnosed hiatus hernia, all had thoracic symptoms suggesting angina pectoris. It is apparent that, statistically, a high percentage of the patients with hiatus hernias seen by me have precordial symptoms, while some of my colleagues interested primarily in gastro-intestinal diseases rarely see cases who have cardiac or thoracic symptoms.

In an attempt to give a descriptive picture of the clinical problem, three case records have been chosen. These represent a fair cross-section of the diagnostic problems usually encountered.

Case Report No. 1. J. S., a white man, aged 57,

From the Department of Medicine, School of Medicine, Medical College of Virginia.

*Read at the annual meeting of the Medical Society of Virginia in Roanoke, October 5-7, 1942.

a mine foreman, referred in January of 1937 with a provisional diagnosis of heart disease, probably angina pectoris.

Chief Complaint: He stated that for approximately one year he had been incapacitated by the following group of symptoms: At a place just beneath the lowest point of the sternum there occurred, in paroxysms, a burning oppression which extended upwards over the left sternal margin to a point opposite the sternal notch. On several occasions the discomfort had been quite severe in the left axillary area. During one of the severest episodes a burning discomfort was felt on top of the left shoulder and the inner side of the left arm.

The attacks occur at irregular intervals and he is uncertain what precipitated them. He is convinced that there is no definite relationship to exercise, for some of the worst spells have occurred after retiring. Recently, against his physician's advice, he found that walking for recreation would give him positive relief. During the attacks his heart flutters and beats rapidly. On several occasions when the pain was most intense vomiting relieved him, and invariably belching occurs with the attacks with some relief.

Following the most severe spells the skin over the area of pain distribution is so sensitive that his shirt is uncomfortable. Significantly the attacks invariably occur if his work is unusually heavy and disturbing, particularly so if his sleep is broken by thoughts of his occupational difficulties.

He is convinced that simple foods in reduced quantities lessen the frequency and severity of the attacks. For the past few weeks he has been getting distinctly worse, so that sleep has been difficult; yet he feels very drowsy. Last evening at the hotel he took a "sleeping tablet" and slept well. This morning he expresses himself as feeling much improved.

He has consulted many physicians and has been given different advice by each of them, but all agree that he has serious heart disease. He himself has become quite apprehensive and fears that the attacks may prove fatal.

Physical Examination: Blood pressure was 130/80, pulse 82, respiration 20. The patient was an apprehensive man, manifestly much concerned about his physical status. The examination otherwise showed him entirely normal for a man of his age, except for hyperaesthesia of the precordial area extending from the third interspace above to the sixth interspace below and from the left sternal margin to the nipple line.

Laboratory Data: All laboratory findings were normal, including a negative Wassermann and Kline.

Electrocardiogram: Electrocardiogram showed occasional ventricular extrasystoles; otherwise normal.

X-ray Report: "A film of the chest at 7 ft. target film distance showed the transverse diameter of the heart to measure 13.8 cms. and the transverse diameter of the thorax 29.3 cms. Cardio-thoracic ratio was 46.1 per cent. The heart is shown normal in x-ray pictures." (Fig. 1).

Fig. 1.

Studies of the Stomach: "The barium passed down the esophagus, but was slightly delayed at the cardia. There is herniation of the cardia at the esophageal orifice of the diaphragm. The hernia measures 3 x 5 cms.

"Conclusions: Small hiatus hernia."

Progress: At the completion of the examination the patient was told that his heart was normal and

the cause of his symptoms was explained to him in simple terms. He visited his sister for two weeks and while there active exercise was encouraged. No restrictions in his diet were recommended, but he was advised to eat slowly and chew all food well. Belladonna in physiologic doses was prescribed and bromides in moderate doses were administered twice a day. He improved promptly and at the end of ten days he was free from symptoms.

His progress has been followed at intervals. His last visit was on August 20, 1942, nearly five years after he was first seen by me. He stated that at times when he works too hard and becomes nervous there would be a recurrence of his original symptoms, but he has learned that a few days of rest from his work and a return to his former medication would give prompt and satisfactory relief. His electrocardiogram remains normal.

Case Report No. 2. O. V., white female, aged 70, referred to the hospital with a provisional diagnosis of angina pectoris, probably complicated by coronary artery occlusion.

Chief Complaint: About six months ago she noticed on several occasions when drinking ice tea, the first few swallows seemed to stop at a point under the lower sternum, causing a hard aching lump. This would wear off in a minute or so and sometimes she could drink the rest of the tea. She finally concluded that tea was bad for her and left it off. She had no trouble swallowing soft or hard foods, and felt perfectly comfortable in every other way.

About two months ago one mid-afternoon she was seized with a hard aching pain under the lower sternum which remained for 20-30 minutes, then passed off. The same thing recurred the next day and three days later. Her physician was consulted, who gave her some medicine which gave little relief. Similar attacks recurred at intervals, not related to exertion or any other factor, and having no constant relation to meals. Five weeks ago she had a similar very severe attack of pain which was accompanied by a sharp aching pain in the left upper arm. This was the first time there had been any radiation from the lower sternal area. Her physician saw her at this time, and put her to bed, where she has remained. *Since being in bed* the attacks of pain have been more frequent and more prolonged, and on numerous occasions the radiation to the left arm has been noticed.

Two weeks ago after a day of rather severe substernal pain, she became very nauseated and vomited a small amount of food. A similar attack recurred within twenty-four hours and she was removed to the hospital in an ambulance. No other significant complaints were elicited.

Physical Examination: Temperature 99°; pulse 84; respiration 22; blood pressure 150/85.

The patient was a well nourished and preserved woman who was manifestly in considerable distress.

The examination did not show any physical phenomena of significance and the heart and vascular apparatus were normal for the patient's age.

Fig. 2.

Laboratory Examination: The laboratory studies were normal.

The electrocardiogram was normal for the patient's age.

X-ray studies of the esophagus and stomach showed: "The esophagus passed well posterior down to the esophageal orifice of the stomach at the level of the diaphragm but then there was at least half of the stomach herniated through the esophageal orifice into the thorax. In various lateral and

oblique views the rugae of the stomach could be seen covered with barium passing through this orifice of the diaphragm. The distal stomach and duodenal bulb were well outlined below the diaphragm and barium passed into the jejunum without delay." (Fig. No. 2).

Progress: The case presented many difficult problems. Relief of the herniation by operation was the treatment of choice, but the patient's age made such an operative procedure impracticable. It was assumed that the severity of the symptoms was due to an ulcer or inflammation in the herniated portion of the stomach and this assumption was in part confirmed by the improvement following a modified Sippy ulcer treatment.

All food and liquids were given with the patient in the sitting position and she was instructed to remain upright for one hour after every feeding. Belladonna and alkalies were administered along with the ulcer diet. The attacks were reduced both in severity and frequency.

This patient has been followed for approximately eighteen months. She continues to have mild digestive symptoms and occasionally some substernal pain and oppression, but she has improved greatly. The electrocardiogram remains normal.

Case Report No. 3. Chief Complaint: Beginning approximately six months ago, the patient has been having at irregular intervals of three to five weeks paroxysms of substernal pain which have a throbbing and burning character. *Present Illness:* The physical discomfort is confined to the upper two-thirds of the sternum and extends up on both sides of the neck to the lower margin of the jaw. During the attacks any stress on the thoracic cage appears to aggravate the symptoms. Deep breathing modifies it by increasing the sense of deep soreness, yet he has no breathlessness or cough.

Bending over in an effort to lace his shoes definitely aggravates the pain. Getting out of bed or rising from a chair aggravates the discomfort, but after he is on his feet, he is convinced he is more comfortable and at times the pain will disappear while he is standing. On one occasion during a very severe attack there was discomfort passing across the back of his chest, approximately mid-way between the level of his shoulders and the center of the scapula. At no time has he had any discomfort in the top of his shoulders or down the arms.

His last attack which occurred a few days ago was one of the most severe and it lasted from Saturday afternoon about 5 o'clock through Sunday, but he awakened Monday morning feeling well.

During the attacks he sleeps more comfortably with his head elevated by two pillows. There is a slight degree of apprehension, but at no time has he had any symptoms suggesting circulatory collapse. *In between* the spells he feels well and can engage in physical work with perfect comfort. With the exception of the above complaint he expresses himself as being well and as having no cause for consulting a physician.

Fig. 3.

At no time has he experienced any digestive discomfort during the attacks, nor is there any difficulty in swallowing. He has given the matter much concern and cannot attribute the spells to any known factor.

Physical Examination: Physical examination shows him to be a man who has no appearance of illness. His eyes, ears, nose, and throat are normal. His chest was moderately emphysematous and he has a fairly marked degree of dorsal curvature which

gives his back a slight hump.

His lungs otherwise were negative. His heart apparently is normal in size and shape. The first and second sounds are of normal quality and intensity. There are no murmurs.

The peripheral vessels are soft. The pulse rate was 68; blood pressure 108 systolic and 78 diastolic. The optic fundi are normal.

The neurological examination was negative.

Laboratory Examination: The electrocardiogram was normal with the exception of an occasional ventricular extrasystole.

X-ray Report: "Barium passed down the esophagus without delay in the erect position but in the recumbent and Trendelenburg position, there was herniation of about 1½ in. of the cardiac portion of the stomach through the diaphragmatic hiatus. A film was made to confirm fluoroscopy." (Fig. No. 3).

Impressions: Careful analysis of the patient's symptoms are quite conclusive that the attacks are probably not angina pectoris associated with coronary artery disease. The most characteristic difference is that the attacks are in no way influenced by effort and in between the attacks he is entirely free from symptoms, and can undertake physical activity with perfect comfort. The x-ray shows a hiatus hernia.

DISCUSSION

The idea that the diaphragm, stomach, and colon may be directly or indirectly concerned with symptoms quite similar to those occurring with coronary artery disease is not new. Morgagni in 1769[5] described in detail a patient who suffered from a "vehement cardialgia" but who was subsequently shown to have a diaphragmatic hernia.

In a book entitled "Angina Pectoris" by Walter Verdon, published in 1920,[6] the following extract from the diary of Dr. X, a case reported by the author appears.

"When tender spots, which come and go, are found at points of outcrop of intercostal nerves and when rigidity in somatic muscle appears, we recognize the existence of hyper-irritability at segmentary centres; when sensations pathognomonic globus are ingravescent and merge into agonizing pain radiating from thoracic stations, situated in one attack at upper, in others at lower, and yet again in others, at mid sternal regions, we know that these sensations are generated in esophagus and that they spring from spasm occurring at sectional portions of the muscular tunic of this lengthy tube.

"Now, we read the lesson writ large in cardiographic records and we learn from the tape that, even in the extremity of anginous pain, the heart may be pursuing the usual quiet tenour of its rhythmic round, unperturbed by disorder in any one of its five Gaskellean functions and wholly unconcerned in the gravity and turmoil of passing events.

"The stolidity of the heart startles us, and after repeated sequences of these displays, consciousness awakens gradually to the fact, that, no primary part is played in anginous etiology by this long suspected organ."

Verdon believes that angina pectoris has as its predisposing cause a "segmental cord neurosis" and the precipitating cause of the attacks is located in the gastro-esophageal canal. I am certain that no one could possibly agree with Verdon's major theme, for his hypothesis is too all inclusive. On the other hand, the book is intriguing and in the light of subsequent studies it must be agreed that his concept is in part correct.

Von Bergmann, in 1932,[7] was one of the first to specifically relate the pain of diaphragmatic hernia with the angina syndrome. His interest was in the possible mechanism of pain in hiatus hernia and the effects on the heart which might result from what he termed the "gastro-cardiac complex".

Roemheld in 1932,[8] Winkler[2] and Hofbauer[9] in 1933, all described recurring attacks in patients simulating angina pectoris which they concluded were definitely associated with and dependent on pathologic lesions of the diaphragm as well as disturbance of its physiologic function.

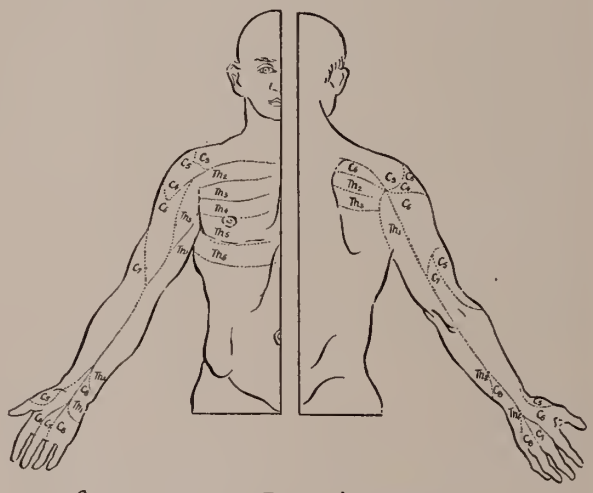
One of the intriguing aspects of this syndrome is the mechanism of pain production. The anatomical relationship of the cardiac end of the esophagus and the diaphragm to the aorta and heart would logically suggest an explanation for the similarity of the symptoms of coronary artery disease with the angina syndrome and the symptoms resulting from the diaphragm and the lower end of the esophagus. But of much greater importance is the relationship that exists between the autonomic nerve fibers supplying the lower esophagus and neighboring organs and the phrenic nerve and its occasional connection with the cervical sympathetic ganglia.

The esophagus is supplied with para-sympathetic (vagal) fibers which are largely motor and secretory

in function but there are some sensory fibers as well. From the same vagal nerve trunk there are fibers supplying the stomach, heart, and aorta. In addition there is a rich innervation of sympathetic fibers from the third to the sixth thoracic segments which carry both motor (efferent) and sensory (afferent) impulses. The observations of Capps has shown that pain arising from the tendinous portion of the diaphragm travels over the afferent neurons in the phrenic nerve and are distributed to the skin areas of the third, fourth, and fifth cervical segments. By careful anatomical studies Monteiro[10] has shown that at times there are filament connections between the phrenic nerve and the middle and inferior cervical sympathetic ganglia. This connection may well explain the pain in the arm which occurs in the occasional patient with grossly disturbed function of the diaphragm and the mechanism of pain distribution could conceivably be similar to that of angina pectoris. Jones and his co-workers have investigated the mechanism of pain in hiatus hernias in considerable detail. Basing their conclusions on their studies and the observations of many other investigators they have formulated tentatively the following conclusion:

"On the basis of these considerations, it seems highly probable that the pain of hiatus or diaphragmatic hernia is mediated over the visceral afferent fibers supplying the esophagus and the cardiac or fundic portion of the stomach, or over the sensory afferent fibers from the diaphragm contained in the phrenic or middle or lower thoracic nerves. Overflow to adjacent low cervical or low thoracic segments undoubtedly occurs. Over-distention of the lower end of the esophagus or the herniated portion of the stomach, with or without an associated localized esophagitis or gastritis, may thus be responsible for the production of anginal pain in any or all of its components. The shoulder pain is largely due to diaphragmatic irritation, probably by tension and traction exerted on the hernial orifice by the distended viscus contained therein. The relief obtained following the use of nitroglycerin or atropine indicates that esophageal and upper gastric disturbances are the most important components in the painful sensations experienced in this condition. This statement seems particularly applicable to the mechanism of pain noted by patients with small hernias. The role played by the vagus nerve is undoubtedly purely motor and is concerned in the production of neuromuscular disturbances, such as the spasm and abnormal peristalsis noted in the esophagus. Smooth-muscle disturbances may be initiated by a local inflammatory process at or near the cardiac sphincter, by distention of the herniated portion of the stomach or by central stimulation of the esophagus secondary to marked emotional tension or excitement. In all probability, acute emotional upsets actually affect the cardiac sphincter itself, with resultant achalasia due to sympathetic (adrenergic) over-stimulation. These motor disturbances are similar to those occurring in any hollow viscus and form the basis for most, if not all, visceral pain."

These explanations seem tenable, for they are based upon sound physiologic and anatomical facts and are in accord with the established concepts of referred visceral pain. A review of Chart No. 1



Cervical and Upper Thoracic Dermatomes (Foerster)

correlated with the knowledge of the nerve supply of the structures concerned in this discussion shows why sensations are distributed over those areas affected in angina pectoris.

If the evidence is conclusive that there is a syndrome which results from the esophagus and diaphragm and these symptoms are of such a character that they may be mistaken for angina pectoris, the importance of differential diagnosis becomes the essential clinical problem. The diagnosis of angina pectoris or coronary artery disease is a grave responsibility for the physician and a problem of great importance to the patient, for the prognostic implications inherent in the diagnosis are significantly concerned with life expectancy as well as occupational limitations.

In a lecture before the Royal College of Physicians of London in July, 1768, William Heberden, Jr.,[11] described a group of patients whose symptoms were so constant and significant that he gave the syndrome a name "pectoris dolor" (angina pectoris).

In the medical transactions of the Royal College of 1786, under the title "Some Account of a Disorder of the Breast," Heberden wrote:

"But there is a disorder of the breast marked with strong and peculiar symptoms, considerable for the kind of danger belonging to it, and not extremely rare, which deserves to be mentioned more at length. The seat of it, and sense of strangling, and anxiety with which it is attended, may make it not improperly be called *angina pectoris.*

"They who are afflicted with it, are seized while they are walking (more especially if it be uphill, and soon after eating) with a painful and most disagreeable sensation in the breast, which seems as if it would extinguish life, if it were to increase or continue; but the moment they stand still, all this uneasiness vanishes.

"In all other respects, the patients are, at the beginning of this disorder, perfectly well, and in particular have no shortness of breath, from which it is totally different. The pain is sometimes situated in the upper part, sometimes in the middle, sometimes at the bottom of the os sterni, and often more inclined to the left than to the right side. It likewise very frequently extends from the breast to the middle of the left arm. The pulse is, at least sometimes, not disturbed by this pain, as I have had opportunities of observing by feeling the pulse during the paroxysm. Males are most liable to that disease, especially such as have passed their fiftieth year.

"After it has continued a year or more, it will not cease so instantaneously upon standing still; and it will come on not only when the persons are walking, ing but when they are lying down, especially if they lie on their left side, and oblige them to rise up out of their beds. In some inveterate cases it has been brought on by the motion of a horse, or a carriage, and even by swallowing, coughing, going to stool, or speaking, or any disturbance of mind."

One must note with great interest that in this classic description of angina pectoris not a single phenomenon is stressed. A group of distinctive, subjective symptoms were observed in patients and these symptoms recurred under similar exciting factors and had a remarkably constant pattern of behavior.

Since Heberden, we have learned much about the nature, recognition, and prognosis of angina pectoris. Yet it is not fully appreciated how varied are the extra cardiac causes of oppression and pain located in the anterior chest, left shoulder, and with frequent radiation down the left arm, which have a striking yet superficial similarity to the angina pectoris associated with coronary artery disease.

A study of the quotation from Heberden's original description of angina pectoris reveals the very significant truth that the syndrome is essentially subjective in its clinical manifestations and that these symptoms consistently recur when stress is put on the circulation and when the stress is relieved symptoms disappear.

When one reviews the clinical records of the patients here reported and those studied by others, certain definite differences between angina pectoris and the cardio-diaphragmatic syndrome become apparent. In summary, they are:

a. Exercise is the most constant and consistent precipitating factor of symptoms in angina pectoris, whereas the symptoms of a hiatus hernia are effected with great inconsistence.

b. Food has variable effects in angina pectoris, but the symptoms of diaphragmatic hernia are usually aggravated by it.

c. Angina pectoris tends to progress so that less and less stress produces symptoms and the symptoms rarely if ever subside to a degree that exercise and other stresses fail to produce symptoms. The cardio-diaphragmatic syndrome frequently has intervals of entire relief from symptoms, and the progression of symptoms is not consistently concerned with physical activity.

d. The horizontal position, particularly at or soon after meals, usually aggravates the symptoms of a hiatus hernia, while it has no effect or relieves angina pectoris.

e. A patient who has had repeated attacks of angina pectoris decubitus and maintains a consistently normal or shows only minor changes in the electro-cardiogram should be studied for a possible diaphragmatic hernia, or other causes of chest pain, not related to coronary artery disease.

f. Atropine and bromides may relieve the symptoms of a hiatus hernia but will have no consistent effect on angina pectoris.

g. Finally, the full realization that heart disease is not the only cause for substernal pain and op-

pression with radiation to the neck, shoulders and arm is essential to the correct anatomical diagnosis in patients having these elusive symptoms.

One readily appreciates how stimuli from the mediastinal structures, diaphragm, and sub-diaphragmatic organs may produce subjective symptoms in areas similar to those arising from the heart when the anatomical and physiologic intimacy between the parasympathetic, sympathetic, spinal, and phrenic nerves supplying these structures is comprehended.

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Discussion

DR. HUGH H. TROUT, Roanoke: For two reasons I am very happy to open the discussion of this paper. The first is because we all like to talk about those things of which we know very little, and the second reason is that I am delighted at this time to be able to talk about something besides the Procurement and Assignment Service of Virginia.

Dr. Porter indulged in a historical review, and I am going to follow his example. My particular interest in diseases of the diaphragm and pericardium is due to the fact that some years ago—more than I care to admit—I was present at the first autopsy done by Dr. Pick in a case in which the diagnosis was made before death of pericardial adhesions. The diagnosis was made beforehand and the autopsy done afterwards, and, as a student, I watched this first autopsy for this condition. This was the beginning of the recognition of "Pick's syndrome," "pericarditic pseudocirrhosis," etc.

Some years ago we called attention to the fact that in a certain group of these pericardial adhesions the pain might be due to the conflict between the cardiac beat and the respirations with the up and down motions of the diaphragm. With the two tied together by adhesions there was a conflict and it seemed that if either the heart or the diaphragm could be put out of business temporarily, such a procedure might relieve the pain. The heart certainly could not be put out of business; so, looking at it, as a surgeon, we decided to see what we could do toward paralyzing the diaphragm. We were much surprised and certainly very much delighted to see that interruption of the left phrenic nerve gave a large number of these cases great relief from pain.

Also, these patients could be gotten into a better condition so that some type of cardiolysis operation could be done if such became necessary. Altogether, we have had four cases in which we have done a cardiolysis operation for adherent pericarditis. In eighteen cases the phrenic nerve has been pinched preliminary to preparing the patient for a more extensive pericardial operation. Fourteen of them, however, have been so greatly improved that they have refused to undergo the more extensive operation.

In many cases so much relief has been gained from pinching the nerve that it might seem worth while to try the same thing for those cases of which Dr. Porter has spoken. Personally, I do not like to avulse the phrenic nerve, and no one is going to pull out my phrenic nerve until the "pinching" has been tried first and found to give relief.

Dr. Porter referred to diaphragmatic hernia, and I want to report one case of pain from diaphragmatic hernia in a patient who had a very pleasant way to relieve himself. He had a large diaphragmatic hernia and carried it for years. When the stomach, etc., became caught up in the diaphragmatic opening, he would have attacks of severe pain, but he refused to have an operation on his diaphragm. He preferred to drink three or four bottles of beer while standing up at the bar. The weight of the beer was sufficient to pull the abdominal contents back to their normal positions, and the patient obtained relief.

He maintained he could not drink enough water to accomplish the work done by the beer.

DR. PORTER, in closing: I want to thank Dr. Trout for his discussion. I regret that he has not seen fit to discuss the paper and has consumed his time in the discussion of constricting pericarditis. The two diseases are in no way related.

He has been a little bit historical and I myself am similarly inclined. The first recorded patient in whom

the symptoms were those of precordial pain and who showed at autopsy diaphragmatic hernia was the one reported by Morgagni in 1769.

One of the most interesting aspects of the subject under discussion is concerned with the mechanism of pain. It is well known that only a small percentage of individuals who have a hiatus hernia ever have any significant symptoms. It is possible that changes occur in the herniated portion of the stomach which produce an irritable focus from which afferent stimuli emanate. These are carried over the third, fourth, fifth, and sixth dorsal segments through the sympathetic nerves and if the stimuli are sufficiently intense, there is an overflow to adjacent cord segments. Undoubtedly the pain in the shoulder is carried over the sensory fibers in the phrenic nerve.

Recently a Portuguese anatomist, his name not recalled, has shown that there exists definite connections between the phrenic nerve and the middle and inferior cervical sympathetic ganglia. It is conceivable that this anatomical connection may explain the pain in those patients who have gross disturbance of diaphragmatic function.

SOME OF THE "DO'S AND DON'TS" IN THE TREATMENT OF FRACTURES—WITH SPECIAL REFERENCE TO THE RURAL PRACTITIONER WHOSE BURDEN AND RESPONSIBILITY WILL BE INCREASED BY THE PRESENT EMERGENCY*

T. JEFFERSON HUGHES, M.D., F.I.C.S.,
Roanoke, Virginia

In presuming to write an article on the subject of fractures, I do so with the feeling of the inadequacy of my knowledge to do justice to the subject. I spent the first ten years of my professional career in a remote rural district, where consultation was not easily obtained, and where diagnostic facilities, such as x-ray and other instruments of precision were not available. Therefore, I found myself doing everything, from removing a gangrenous appendix in an attic, with no entrance or exit large enough to remove the patient; a thigh amputation on the front porch of a mountain cabin, with a mountaineer administering the anesthetic and a neighboring housewife keeping the flies off the field of operation with a homemade, paper fly brush; to treating all manner and kinds of fractures, as side issues to the general practice of medicine.

The rural practitioner today, through the medium of good roads, automobiles and other more up-to-date facilities, has come to depend largely upon the specialist in the various branches of medicine and has, to a greater or lesser degree, become more dependent on outside assistance. The present national emergency will deprive those of us who are left to guard the health of the civilian population of the services of many specialists. We will, therefore, be compelled to rely upon our personal resources more than formerly.

I feel that a discussion of some of the more simple methods of dealing with fractures and other traumatic injuries will be opportune at this time, and if the discussion serves to renew our interest and bring the simple procedures, which are so essential to the successful handling of these cases, more up-to-date in our minds, the purpose of this paper will have been accomplished.

Preventive measures are the most important factors in conserving and improving our health standards. Large corporations have eliminated a great many accidents through education, by safety programs and by the incorporation of safety devices. From 75 per cent to 85 per cent of the accidents which would have occurred under conditions existing a decade ago, are prevented today. Ralph Lee, of the General Motors Corporation, in an address on "Human Failure Accidents", made the statement that as a result of determination, cooperation, and persistent effort, his corporation had been able to prevent 83 per cent of the accidents which would have occurred under safety conditions which existed in 1929.

While prevention has played, and is playing, such an important part in reducing corporation accidents, we are still faced with an increase in motor vehicle accidents, and, with the prospect of war casualties, the treatment of fractures is subject to a further increase during the present emergency.

I believe that the greatest contributing factor in the cause of motor vehicle accidents is the consumption of alcohol as a beverage. Alcohol is incom-

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*Read at the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

patible with the machine age in which we live. In a study by a committee of the American Medical Association it was concluded that a person driving a car with .15 per cent of alcohol in his blood was 55 times more likely to have an accident than one who had no alcohol in his blood. Other contributing factors to the increase of motor vehicle accidents are defective vision and administration of certain drugs, such as opiates, barbiturates, etc.

Fig. 1.—Fracture of upper third of femur reduced by open method by means of Lane plate.

It is also interesting to note that since the beginning of our preparation for war the number of corporation accidents had greatly increased due to the unusual number of unskilled employees who have not yet learned to protect themselves from machinery.

Recent statistics revealed that from Pearl Harbor up to date we have lost about 5,000 persons in combat service, as against 35,000 due to accidents of various kinds. According to the National Safety Council's figures, there were 102,500 accidental deaths in 1941, and 350,000 permanently disabled, with about nine million lesser casualties.

William A. Irvin, former vice president of the United States Steel Corp., and now chairman of the War Production Fund to Conserve Man Power, had this to say: "Today we have new men, new machines, longer hours and a faster work pace. All these and other added pressures of war time mean more hazards and more mishaps to the workers."

While most large corporations have safety programs, the smaller firms, practically all of which are now changed over to war production, either do not have or cannot afford to have, extensive safety programs. All of this adds up to a great increase in accidents due to the national emergency.

In case of an accident, the following simple rules should be borne in mind:

(1) Do not move patient from the scene of the accident until a temporary dressing and splint have been applied.

(2) If there is no evidence of head injury, give patient hypodermic of morphine to relieve pain and lessen shock.

(3) If shock is severe, this should be treated before reduction is attempted.

(4) If the fracture is compound, sprinkle sulfanilamide in the wound immediately, and administer tetanus and gas-gangrene serum as soon as possible.

(5) If the fracture is of the upper part of the spine; transport the patient lying on his stomach; if of the lumbar region, lying on his back, as these positions favor immobilization in the respective localities of the fractures.

(6) Do not attempt to reduce a fracture without the use of either a local or general anesthetic.

(7) The pain of a fractured rib will be relieved by injecting novocain in the vicinity of the fracture before moving the patient.

(8) Accomplish thorough debridement, clean the wound with soap and water and irrigate it with normal saline solution. It is not necessary to use caustic antiseptics and, indeed, it may retard healing through coagulation of the tissues. Excise the skin edges and discard the instruments used. If the ends of the bone fragments are grossly contaminated and impossible to clean, excise them with saw or bone forceps.

(9) After removing the devitalized tissue, release the tourniquet and stop bleeding; then irrigate again with warm saline solution, sprinkle more sulfanilamide powder, and, after reducing the fracture, close the wound, avoiding the use of buried sutures if possible.

(10) Apply dressing, immobilize the fracture and do not remove the dressing for from three to five

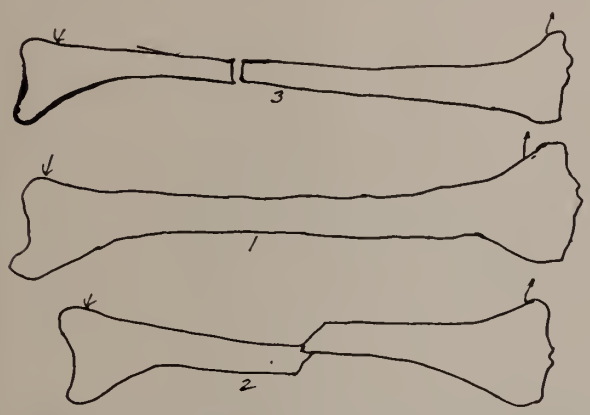

Fig. 2.—Percussion-Auscultation Method of diagnosing fracture of bones. In No. 1 (no fracture) the audibility of vibrations normal, clear and distinct. In No. 2, the audible vibrations are diminished. In No. 3, there are no audible vibrations.

weeks unless there is evidence of sepsis, such as chills, fever, etc.

(11) Watch for symptoms of gas-gangrene. It is better to administer gas-gangrene serum weekly until the dressing is removed.

(12) In chest injuries, the nature of the injury should be determined, if possible, before moving the patient. The simple introduction of an aspirating needle will give valuable information. If you have a pneumothorax, air will escape; while if you have a hemorrhage, blood will be aspirated. If the latter, the patient should be transported with the chest elevated. The cyanosis usually present in these cases is due to pressure by air or blood interfering with the return circulation. Aspiration will serve to relieve this pressure.

(13) In puncture wounds of the chest, plug the opening immediately with whatever cloth or gauze is available, to exclude outside air. Cloth or gauze covered with vaseline serves well for this purpose.

In compound fractures or in open-operative treatment of fractures, care should be exercised to maintain the best possible blood supply, by keeping the member warm and encouraging the movement of the fingers and toes of the fractured limb. In the treatment of compound fractures, as in the open method of treating un-united fractures, it is usually necessary to wire, plate or use some method of bone graft to hold the fragments in apposition and great care should be exercised to interfere as little as possible with the circulation, since callus comes via the blood—75 per cent from the bone marrow and 25 per cent from the periosteum (Albee). It is, therefore, important when grafts are used, to cut the graft in such a manner that marrow will be left attached to the graft. Here precision surgery is important. Insert a properly fitted graft so that marrow comes in contact with marrow, and periosteum in contact with periosteum, thus favoring the development of callus.

Complete immobilization of fractures after wiring

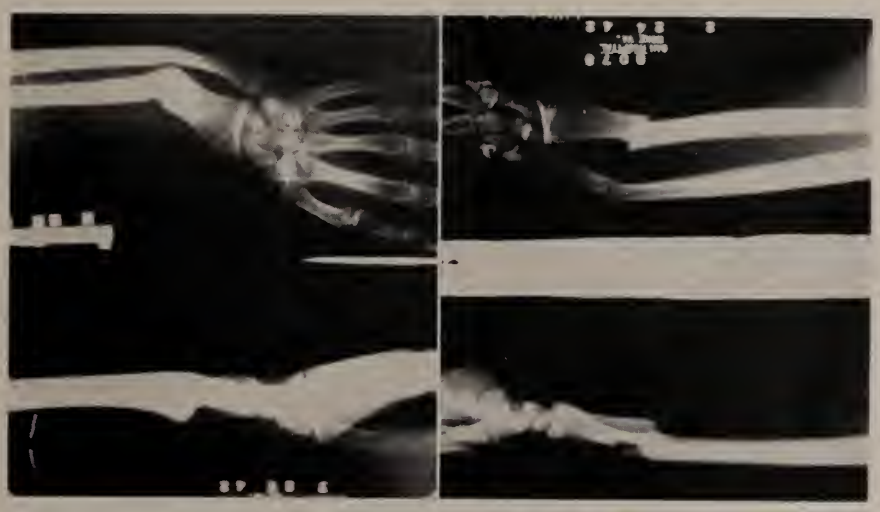

Fig. 3.—Fracture of radius and ulna reduced by closed method and plaster cast applied. Cast removed too early, followed by bad functional and anatomical results.

or the insertion of bone graft is necessary for a period of from eight to nine weeks and, as previouly stated, every facility for increasing the circulation to the parts should be employed, even the movement of the fingers and toes giving considerable exercise to the muscles of the injured limb.

We are all familiar with the swelling of the limb long after union of the bone has taken place. This swelling is largely due to atrophy of all of the tissues, including the blood vessels, which lessens the blood supply.

The question of the selection and the method of applying the sulfa drug was discussed at length at a recent meeting of the International College of Surgeons in Denver. The majority of those discussing this favored sulfanilamide due to its greater solubility. As proof of this fact, it was claimed that, by the use of polarized light, sulfathiazole crystals have been found in an excised incision weeks after it was used; not so with sulfanilamide. The best method of its use is to sprinkle it from a container, similar to a salt shaker, rather than to dump it in, in bulk, thus favoring absorption.

A simplified method of treating common fractures of the arm may be of interest, and will be briefly considered, since the general practitioner is often called upon to handle these cases.

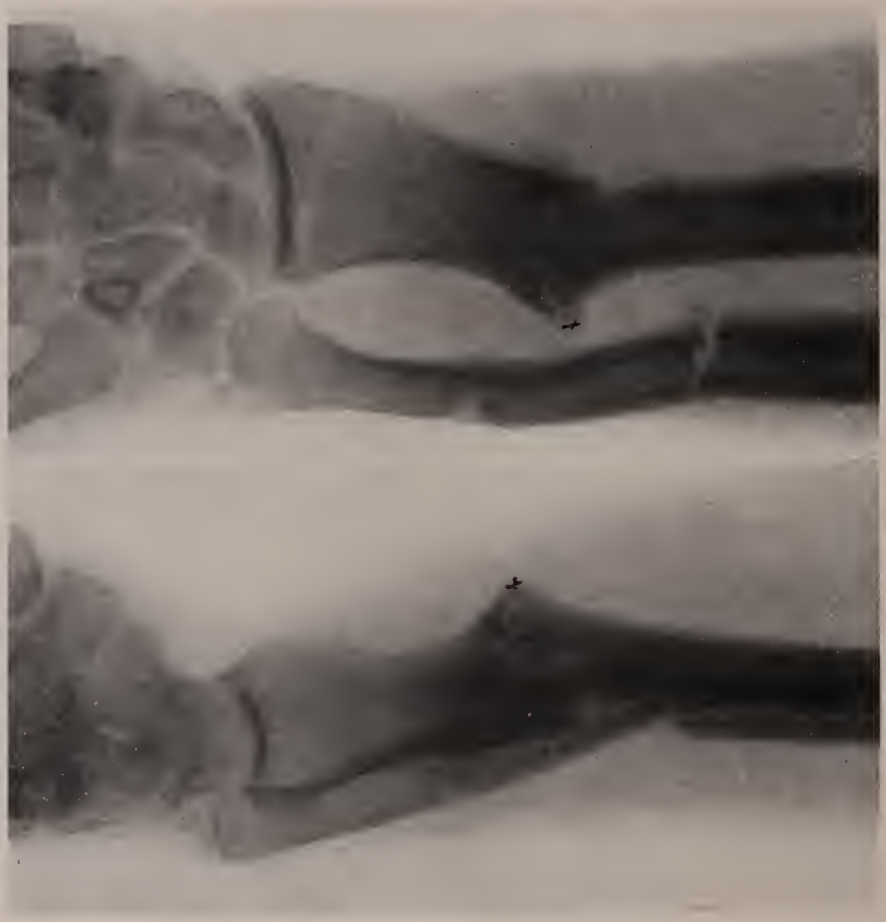

Fig. 4.—The above case (Fig. 3) was corrected by open operation with excellent results (Fig. 4) and the deformity completely corrected. The excess of callus (x) is not discernible and does not interfere with function.

In discussing fractures of the surgical neck of the humerus, Morehead divided them into two types; those in which you have approximately 50 per cent apposition of the fragments, and those in which there is no apposition. This author claims that the relation of the head of the humerus to the glenoid cavity is more important than the relation of the of the head to the shaft, and he warns against the danger of increasing the displacement in an effort

to improve the reduction. He recommends the use of the sling, with early active and passive motion to prevent adhesions. Geckler approves of hanging traction with no support under the elbow. A good way to accomplish this is to apply a plaster cast from hand to axilla, with the fore-arm flexed. In this position, the longitudinal muscles exert a squeezing effect on the fragments, and the tendon of the long head of the biceps muscle will control the upper fragment. The *modus operandi* is similar to that of the hanging cast in the treatment of fractures of the shaft of the humerus, which gives good results in a majority of the cases. Some allow the arm to hang straight by the side; I prefer the arm flexed, as this allows continued traction at night with the use of the back rest.

The treatment of Colles' fracture, which is so frequently seen, is familiar to every one, and needs no special reference here. In fractures of the elbow, the treatment is more difficult and the result more often unsatisfactory; therefore, these cases should be referred, if possible, to men specially skilled in this class of work. Neither should the general practitioner attempt the use of Smith-Petersen pin or the establishment of counter traction by the use of the Kirschner wire, as these operations require special skill and hospital technique.

In this connection, I would like to call attention to the advantages of using a local anesthetic in reducing fractures of the extremities and other superficial bones. The injection of a liberal quantity of a 1 per cent solution of novocain in the locality of the fracture not only relieves the pain incident to the manipulation but also relieves and prevents spasmodic contraction of the muscles during and following reduction.

Pertinent to this discussion, one of the more recent advances in the treatment of sprains is the injection of novocain solution in the injured tissues; it relieves the pain and enables a much freer use of the parts injured.

If x-ray is not immediately available, it is sometimes difficult to diagnose the existence of a fracture or to determine whether the fracture has been successfully reduced. A simple procedure described by Virgevani in 1925, and by Lippman in 1932, and again described by McGraw in a recent issue of the *Archives of Surgery,* is as follows: Place the bell of the stethoscope over one end of the fractured bone and percuss over the other end of the bone. If there is no contact of the fragments there will be no audible vibrations. If there is contact, the intensity of audibility will be in direct proportion to the degree of contact.

A few simple instruments, either home-made or purchased from a hardware store, which may be used in wiring or plating a fractured bone are:

1. Ordinary pliers, costing 60c, with jaws ground to fit the bone.
2. Retractor and periosteum elevator, combined, machined from a thin piece of flat steel.
3. Flexible wire with notch filed in flattened end to push wire through hole drilled in bone.
4. Slender flexible wire with crochet hook filed in flattened end to draw wire through hole in end of other fragment.
5. Part of a broken stethoscope with hole drilled in flat end, used to pass around bone to draw wire or band around same when so desired.
6. One pair pliers, costing 25c, used for twisting the wire.
7. Wire cutters, costing $1.00.

Total cash outlay for these instruments, $1.85.

SUMMARY

Nothing new is claimed, but rather a discussion of simple procedures, most of which are already in use, in the treatment of fractures and other traumatic injuries.

The importance of maintaining good blood supply to the injured parts, both during the operation and in the after treatment, has been stressed as very efficacious in the development of callus and lessening swelling during the period of convalescence.

The effect of chemo-therapy, in preventing infection, makes it possible to institute primary operative procedures.

A few improvised instruments used in obtaining apposition of the fragments are presented.

A simple aid in diagnosis of a fracture of the long bone by means of the stethoscope as described by McGraw is illustrated.

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DISCUSSION

DR. BERNARD H. KYLE, Lynchburg: The first point that Dr. Hughes brought out with reference to treatment of fractures was immobilization of fractures at the scene of accident, which I think is one of the most important treatments of fractures. We still have ambulances bringing fracture cases into the hospital without any type of fixation whatsoever, and yet we have done a great deal in the way of advertisement and talking in order that all ambulance drivers may be skilled in applying Thomas splints to the legs and arm splints to the arms. Yet they still come in without any type of fixation. I hope everyone here will urge all ambulance drivers in his community never to move a patient from the scene of accident until properly splinted.

In open wounds sulfanilamide crystals should be used, because crystal sulfanilamide is the best sulfonamide drug to put into open wounds. First, the sulfanilamide crystals will seldom cake; sulfathiazole will. Second, it is 1,700 to 1,800 soluble in tissue fluids. while sulfathiazole is only 110 to 200 soluble in tissue fluids. Wounds may be debrided in from 24 to 36 hours after the accident, without infection, provided sulfanilamide crystals have been used immediately following the accident. The best drug to use by mouth is sulfadiazine, because sulfadiazine has a blood level of 6.5, sulfanilamide, a level of 11.9, and sulfathiazole 18.6. That is quite a difference, and it is safe to give provided plenty of fluids are given. The urine output should not fall below 1,000 c.c. in 24 hours if sulfadiazine is used. Bicarbonate of soda should not be used with sulfadiazine, because it increases ionization of the drug and renders it more toxic to the kidneys.

In reference to fractures near the shoulder joint, especially the surgical neck of the humerus, my experience has been that one gets quite a bit of abduction of the proximal fragment due to the posterior scapular muscles, especially the supraspinatus. Those muscles which are attached to the greater tuberosity also tend to rotate the upper fragment outward. The inward displacement of the lower fragment is due to the pectoralis, latissimus dorsi and teres major. Abduction brings them in line better than the straight-down or adducted position. I think the straight-down position, as mentioned by Dr. Hughes, works nicely in a great many fractures of the shaft, but not fractures of the surgical neck. I prefer abduction. If there is marked displacement, reduction under a general anesthetic is necessary, followed by traction in abduction.

Just a word in reference to a epiphyseal displacement in young people which gives the appearance of a dislocated shoulder. If one carefully palpates, it can be found that the head is in the glenoid fossa under the acromion process, and not under the coracoid process, as in the case of a dislocated head.

Fractures about the wrist and ankle joint, are often taken for sprains. I think we should be very careful in diagnosing sprains of the wrist and ankle joint, because they are often fractures. Colles' fracture is easily reduced. Do not extend the cast beyond the knuckle joints, because if this is done a frozen hand is often the result, which is very difficult to handle and requires long treatment in order to restore motion to the fingers and wrist joint. I might say here, I think one had better have the deformity and good motion than to have no deformity and no motion.

The principle in fractures, of course, is reduction of the fracture and the maintaining of that reduction without any damage to the circulation or to the soft parts. I think these are the important principles laid down in treating fractures. Plaster casts offer the best means of immobilization, but be sure you do the patient no harm as pressure is apt to occur at the malleoli or wrinkles result when improperly applied, causing damage to the soft parts as well as to the bone. Casts can easily be bivalved. If you cannot do the patient any good, don't do him any harm.

I have had no experience with chest injuries, and neither have I with the diagnosis of fractures by the percussion method.

A word in regard to plating bones. It is a nice surgical procedure for the surgeon skilled in operating to put in a plate, which, I think, never should be done unless the closed method has been tried and failed, because, if one gets osteomyelitis, especially in children, it remains with you, as well as the patient, from then on.

I want to thank Dr. Hughes for his paper and for the privilege of discussing it.

DR. E. P. TOMPKINS, Lexington: I should like to hear a little discussion of the amount of motion permissible in a plaster cast, especially of the femur. When a cast is applied there is a certain amount of swelling, which usually subsides in a few days, and then there is a certain amount of looseness of that cast. How do you deal with that? Should you take that cast off and reapply it?

DR. HUGHES, closing the discussion: I have nothing further to say, except to thank Dr. Kyle for his discussion, and to say in reference to Dr. Tompkins' discussion that, in my limited experience, I have rarely had an occasion in which it was necessary, or that I thought it advisable, to remove and re-apply the cast after swelling had subsided.

The amount of swelling serves to hold the bones pretty well for a number of days. The swelling usually subsides gradually, and then the little play that you have serves well to prevent any obstruction to the circulation.

As brought out in my paper, I think the main thing in the treatment of fractures is to preserve the circulation, because without good circulation, you will get poor results.

ON LACQUER DERMATITIS*

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Contact dermatitis caused by lacquer on furniture and other objects is a very ancient disease. The Chinese have been lacquering furniture for over two thousand years. The original oriental lacquers were made from a pitchlike material which oozes from certain trees, especially the banyan and ligustrum (privet), the bark of which has been damaged by insects. The insects eat the material and deject the residue on the branch. They become imbedded in it. The Sanskrit word *lac* means a hundred thousand. Lacquer derives its name from the thousands of insects imbedded in it.

Another oriental material widely used in lacquering or "japanning" is the sap of rhus vernicifera, an oriental sumac closely related to poison ivy and poison oak. Its oil causes contact dermatitis among workers and appears to be identical with the oil of poison ivy. Many of the furniture workers in Japan and China find it necessary to wear gloves to avoid getting dermatitis. There is thus a close relationship between lacquer dermatitis and ivy poisoning.

After the lacquer has dried it becomes relatively inert as an allergen but highly sensitized persons may have trouble from it even though very dry and very old. There is a report of dermatitis due to handling a piece of furniture one thousand years old.

Lacquer dermatitis was recognized in Europe in the seventeenth century, when japanned furniture became popular. It was recognized in China two thousand years ago. Even at that remote date the Chinese had a treatment for it. This consisted in poultices made of crab meat.

Not many years ago there was an epidemic of mah jong playing in the United States. Many cases of dermatitis of the fingers and face resulted from handling the mah jong blocks. In general, the more expensive the set, the greater was the danger of dermatitis. This might be interpreted as indicating that such sets were authentically oriental. Another cause of lacquer dermatitis of the hands, mentioned rather frequently in the literature has been lacquered walking sticks. The opportunity for prolonged contact is obvious.

Modern lacquer manufactured in this country is largely synthetic. So many different chemicals are used by different manufacturers that when contact tests are to be made it is important to use the actual lacquer to which the patient has been exposed, either scraping it off the furniture for that purpose or procuring it from the manufacturer. One cannot safely use just any one brand for testing all cases suspected of lacquer dermatitis.

The essential ingredients of lacquers used in this country are (1) nitrocellulose or pyroxylin, to give a good clear transparent body; (2) a resin to add adhesiveness, gloss, and hardness (rosin, shellac, dammar, kauri, copals, sandarac, mastic, elemi, which are natural resins, or ester gum, bakelite, lewisols, etc., which are synthetic resins); (3) plasticisers, added to prevent cracking and peeling (oils such as castor oil, rapeseed oil, linseed oil); (4) volatile solvents such as ethyl acetate, butyl acetate, toluol, ethyl alcohol, benzol, etc.; and (5) pigments.

Sensitization may occur to these American lacquers as well as to oriental lacquer. In one series the proportionate frequency, oriental to domestic, was approximately fifteen to one. Curiously all persons who reacted to domestic lacquer also reacted to the oriental type.

As is usually the case in contact dermatitis, the etiologic agent can often be suspected from the location of the dermatitis. The hands are involved most often. This, of course, does not point to lacquer but merely suggests a contact origin. Unusual locations, however, will often lead one to suspect the causative agent. Thus, a ring of dermatitis on the buttocks suggests toilet seat lacquer dermatitis, while dermatitis of the extensor surfaces of the forearm extending from the wrists nearly to the elbows (an unusual distribution for contact dermatitis) was found in one instance to be due to the lacquered arms of a porch rocking chair. A stenographer had dermatitis of the contact surfaces of the right thumb and forefinger. This suggested occupational contact and the cause was found in an ordinary yellow enameled pencil. When she changed to an alumi-

*Summary notes on an illustrated talk, "Lacquer Dermatitis", presented at the Roanoke meeting of the Medical Society of Virginia, October 6, 1942.

num automatic pencil the dermatitis cleared up. Involvement of the area behind the ears or in the scalp suggests lacquered hair pins or bobby pins.

Nail polish dermatitis is another form of lacquer dermatitis which can often be suspected because of its peculiar distribution. The basic ingredients of nail polish are essentially the same as and often identical with ordinary furniture lacquer. I have seen one lady whose dermatitis could be brought on either by contact exposure to her new set of bedroom furniture or by nail polish. The distribution was the same, on the face and neck in either case. This is presumably because the allergen from the furniture (dresser drawers, etc.) was carried indirectly by means of the fingers.

Nail polish dermatitis is characteristically distributed on the region of the left cheek and left side of the neck in right handed persons. This is the area that one is more likely to touch or scratch with the right hand. The eyelids are often involved either alone or along with the left sided facial distribution.

In most cases of nail polish dermatitis the fingers remain free from involvement, although this is not invariably so.

Nail polish sensitization may play a part on any area of skin that one happens to habitually scratch. It may appear on the leg from the application of nail polish to stop an incipient run in silk hose.

One may be allergic to one brand of nail polish and not to another. One may be allergic to the transparent uncolored nail polish that merely gives a gloss to the nails. Patch tests will enable one to determine what brand if any may be used by the patient.

Although lacquer dermatitis is common enough in the office of the allergist and dermatologist, most people are, fortunately, rather insusceptible. When the hands alone are involved there is little to suggest lacquer as the etiologic agent, but involvement of certain unusual contact areas such as those described above makes one suspect lacquer either on something one handles or on one's person.

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DISCUSSION

DR. WYNDHAM B. BLANTON, Richmond: It is high time someone was rescuing our American medical literature from a poverty of information concerning the lacquer dermatoses. Until now it has been another case of "too little and too late". The Axis Nations (Japan and Germany) have until recently had a corner on this branch of dermatologic allergy.

With his enviable skill and beautiful photography, Dr. Vaughan has warned us of the hazards of an innocent-looking chair arm, the subtle poison of a harmless Chinese game, the danger that lurks in a bobby pin, and the penalty which the plastic (the modern eyeglass frame, for example) sometimes imposes. Dr. Vaughan's paper has raised our index of suspicion, and, after all, this is primary in the kind of a detective work which the allergist is called upon to do. He has extended the frontiers in the ever-widening field of contact dermatitis. The enormity of the subject is appreciated when Sulzberger tells us he has 800 materials for patch-testing, and when a textbook on varnish and shellac advises that a single concern may manufacture as many as 100 to 200 kinds of varnish alone.

Fortunately, we do not have to patch-test for every conceivable agent. A good history and clinical trial may be all that is necessary. The break-down of a substance, such as a modern varnish, takes us into complicated chemistry; but it is possible to test one ingredient after another until the offending one is discovered. If this is done, it is conceivable for a painter, for example, to continue his trade, using materials from which this particular chemical has been excluded.

Fortunately, also, the manufacturers are alive to the hazard incident to the use of their products. One cosmetic concern writes that it has not been able to manufacture a satisfactory non-allergic nail polish. Another cites thousands of complaints from the uses of a competitive product but claims to have a lacquer of its own, of which millions of bottles have been put out over a long period of years, without a single complaint. All of this means that the subject before us, though complicated and perplexing, can be unraveled.

DR. D. C. SMITH, University: Inflammatory skin diseases result from two main groups of causes: the first group is due to a toxic agent reaching the skin from inside the body (constitutional), and the second group results from injurious agents getting to the skin from the outside environment (contact). There are many chemical and physical agents in one's environment which may injure the skin. A sensitivity or heightened reactivity of the skin to an agent increases the possibility of injury. Because of the large number of agents and the many ways of indirect contact, finding the guilty chemical or agent often requires very careful detective work.

The reason why nail polish dermatitis often involves the eyelids is because of the habit that a large number of individuals with long fingernails have of stroking the eyelids with the back of the fingers. Nail polish remover, which in most cases is made up principally of acetone, may also cause an inflammatory reaction in the skin of the hands as well as other parts of the body. This agent like many others may cause injury to the skin by direct irritative action without the factor of allergy being present.

I enjoyed very much this paper with the excellent colored illustrations.

EFFECT OF CASTRATION ON SERUM PHOSPHATASES IN A CASE OF METASTASIZING CARCINOMA OF THE PROSTATE*

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The presence in serum of a phosphatase whose optimum pH is above 9.0 (serum "alkaline" phosphatase) and the increased serum "alkaline" phosphatase activity associated with certain diseases of bone and liver are well known. One of the more recent developments in chemical analysis as an aid to diagnosis and prognosis of disease has been the determination of serum "acid" phosphatase activity. This enzyme is distinct from the better known "alkaline" phosphatase and has its optimum pH at 4.9. Interest in serum "acid" phosphatase originated with the finding that normal adult prostate tissue was extremely rich in an apparently specific phosphatase with optimum activity at about pH 4.9.[1] This enzyme was also found at the site of skeletal metastases secondary to carcinoma of the prostate.[2] An "acid" phosphatase with properties corresponding with those of prostate phosphatase was demonstrated in the blood serum of patients with actively metastasizing carcinoma of the prostate,[3,4] and the diagnostic possibilities of the presence of elevated serum "acid" phosphatase activity have been discussed.[3,5,6,7,8,9]

Huggins and Hodges[10] used the serum "acid" phosphatase level as an objective means of following the effect of castration on metastatic prostatic carcinoma. They found a decrease in serum "acid" phosphatase activity after bilateral orchiectomy in their patients and presented curves showing the effect of this operation on the serum phosphatases in two of their subjects. Clinical improvement was associated with the decrease in "acid" phosphatase in these patients.[11] The clinical benefits of surgical castration have been confirmed in a number of cases of prostatic carcinoma.[12, 13, 14, 15, 16, 17, 18] Other studies of the effect of this operation on the activity of serum phosphatases in this condition have not appeared at the time of this writing.

An excellent opportunity to observe the effect of castration on the serum phosphatases presented itself in a case of metastatic prostatic carcinoma in which the serum "acid" phosphatase value before castration reached 973 Gutman units. This value is one of the highest in the literature, and it was considered of value to know whether an extremely high serum "acid" phosphatase value would drop to about normal in the short time (7 to 12 days) noted by Huggins and Hodges[10] following castration of patients with very much lower serum "acid" phosphatase values (26 and 35 King and Armstrong units). The course of serum "alkaline" phosphatase activity following castration was also studied in an attempt to correlate the effect of castration on the activity of both phosphatases in this case.

"Alkaline" phosphatase activity was determined by the method of King and Armstrong[19] and is expressed as units per 100 cc. of serum. As defined by King and Armstrong, "1 unit of phosphatase is that amount of enzyme which, when allowed to act upon excess disodium phenylphosphate at pH 9.0 for 30 minutes at 37.5°C., will liberate 1 mg. phenol." Values obtained on normal subjects by this method range from 3 to 13 units per 100 cc. of serum. A Klett-Summerson photoelectric colorimeter with Filter No. 42 was used for the colorimetric determinations of both "alkaline" and "acid" phosphatase activity. Serum "acid" phosphatase activity was determined by the method described by Gutman and Gutman.[20] The results are expressed as units of "acid" phosphatase activity per 100 cc. of serum. The unit of "acid" phosphatase activity as defined by Gutman and Gutman[20] is "that degree of acid phosphatase activity which at 37° will liberate from the specified buffer-substrate solution (pH 4.9) 1 mg. of phenol in 1 hour". Although the Gutman method for serum "acid" phosphatase activity is an adaptation of the King and Armstrong method for serum "alkaline" phosphatase, it will be noted that the unit of "acid" phosphatase activity as defined above is not the same as the original King and Armstrong unit and is based on the mg. of

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phenol liberated *per hour*. For this reason we prefer to call the unit of serum "acid" phosphatase activity obtained by this method "Gutman unit" rather than call it King-Armstrong unit as has been done in several papers.[7,8,9] That there is a difference between the two units should be recognized generally in order to avoid confusion regarding the range of so-called normal values, especially since values for "acid" phosphatase activity have also been expressed in terms of the original King and Armstrong unit.[10,11,21] "Acid" phosphatase values presented in this paper are thus calculated on the same basis as those in the papers of Gutman, *et al.*[3,5,6,20] and of Herger and Sauer.[7,8,9] The upper limit of "normal" values on this basis has been considered as 3 units by Gutman and 4 units by Herger and Sauer. The papers of these authors should be consulted for information concerning normal values, borderline values and their interpretation.

The course of activity of the serum phosphatases following castration in this case is presented in Figure 1. The clinical history of the patient is discussed later. It will be noted that the serum "acid" phosphatase curve (solid line) is referred to the left scale and that the serum "alkaline" phosphatase (broken line) is referred to the scale at the right of the figure. The units of serum "acid" phosphatase are the Gutman units defined above; the units of

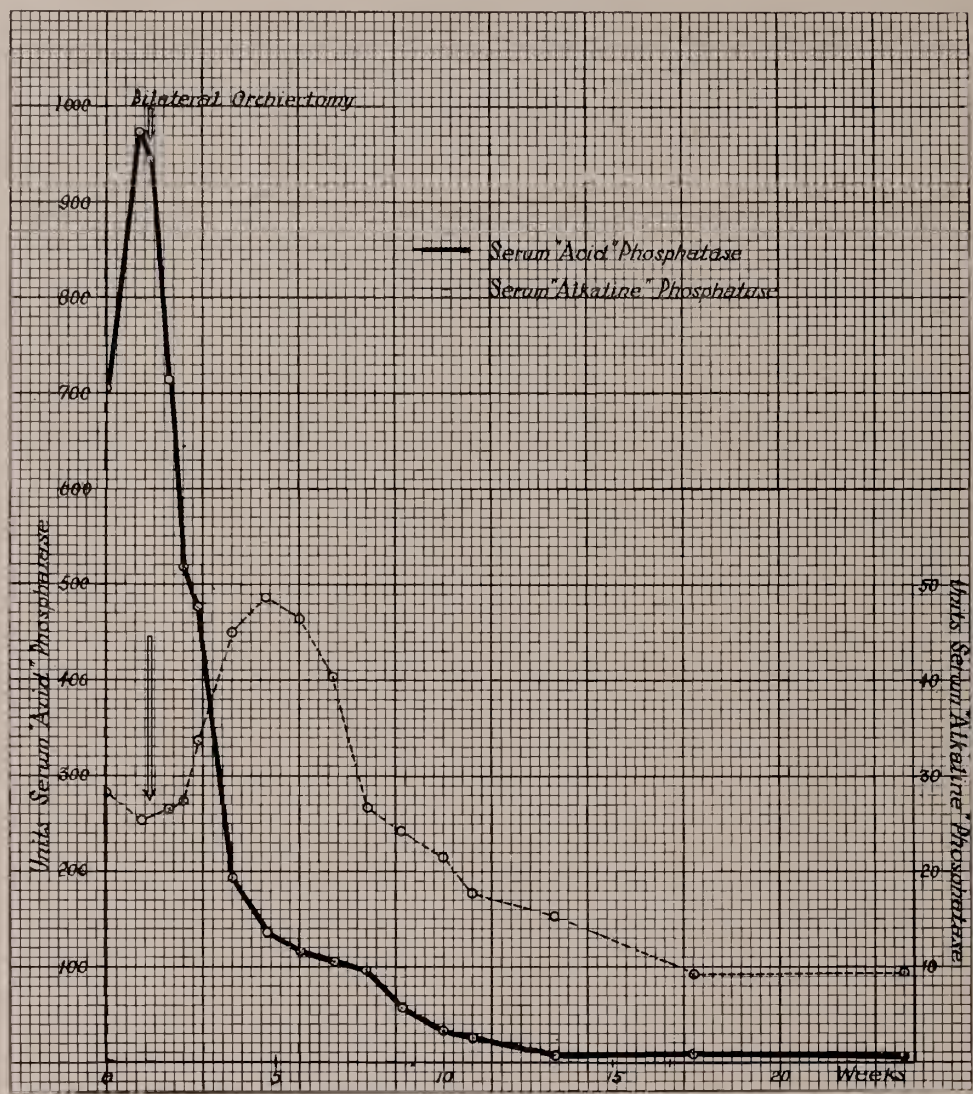

Fig. 1.—Serum phosphatases before and after castration.

"alkaline" phosphatase activity are King and Armstrong units.

"Acid" Phosphatase: Nine days before castration the serum "acid" phosphatase was 705 units. The rapidly increasing enzyme reached 973 units a week later. The arrow indicates an "acid" phosphatase activity of 946 units on a blood sample taken just before the operation. The difference between this value and the one of two days before is considered negligible in values this high. The precipitous drop of the serum "acid" phosphatase activity following castration is evident. Analyses were done twice a week during this period. The "acid" phosphatase decreased 428 units the first week after operation and had dropped 752 units on the 17th post-operative day. The rate of decrease in "acid" phosphatase activity then became less rapid and the enzyme activity during the next month dropped only from 194 to 98 units. It was not, however, until the 12th post-operative week that the "acid" phosphatase approximated the "normal" range at 5.9, at which level it still remained 10 weeks later. This is in contrast to the short time (7 to 12 days) noted by Huggins and Hodges[10] in their studies on castration of patients whose initial serum "acid" phosphatase values were very much lower.

Fig. 2.—Roentgenogram 17 days before castration.

"Alkaline" Phosphatase: It must be remembered that the scale of the "alkaline" phosphatase curve is different from that of the "acid" phosphatase curve and, therefore, the rise in "alkaline" phosphatase is not comparable to a similar drop in the "acid" phosphatase curve. The placing of both curves on one graph, however, allows one to observe the relationship between the time of operation and the time that the decrease in "acid" phosphatase activity and increase in "alkaline" phosphatase activity occurs. The serum "alkaline" phosphatase activity before castration (28.3 and 25.2 units) was higher than normal (upper limit 13 King and Armstrong units). This increase was probably due to the bone productive metastases. The extent of the lesions can be seen in the roentgenogram taken 17 days before castration (Figure 2). The day of operation is indicated by the arrow. Ten days after castration (when the "acid" phosphatase had dropped 469 units) the "alkaline" phosphatase had risen definitely above the pre-castration level. Two weeks later (when the "acid" phosphatase had decreased about 800 units) the "alkaline" phosphatase (48.5 units) had doubled its level before operation. In 3 weeks more the "alkaline" phosphatase (26.9 units) had returned to the level at the time of castration. It then began a gradual decline and was slightly above normal (15.2 units) in the 12th post-operative week when the "acid" phosphatase was near normal at 5.9 Gutman units. The "alkaline" phosphatase was in the normal range 16 weeks after castration and was at the same level approximately 23 weeks after the operation.

The observed increase and subsequent decrease of "alkaline" phosphatase accompanying the post-castration decrease in "acid" phosphatase activity is in agreement with the results of similar experiments by Huggins and Hodges.[10] These changes in "alkaline" phosphatase activity may be caused by, and be reflections of, changes occurring at the site of the metastatic bone lesions. It has been suggested by Woodard and Higinbotham[22] that when cancer originating in a soft part metastasizes to bone the increased serum "alkaline" phosphatase is ordinarily produced not by the invading tumor but as part of a defense or healing reaction in the adjacent bone. If this is correct the elevation of serum "alkaline" phosphatase after castration might be due to an intensification of this defense or healing reaction following the removal of gonadal androgen. Such an intensification of the defense or healing reaction might result in increased calcification at the site of the metastatic lesions following castration in these patients, as was found by Hug-

gins, Stevens and Hodges.[11] After the completion of this phase of bone activity one might expect the serum "alkaline" phosphatase to return to normal. Roentgenograms of changes in metastatic bone lesions after castration in cases of prostatic carcinoma have been published by Huggins, Stevens and Hodges[11] and by Huggins.[14] They noted decreases in, or disappearance of, radiographic evidence of metastases in about 18 months. Figures 3 and 4 are roentgenograms taken 70 days and 6 months respectively after castration in the present case. Although bone productive metastases were still present 6 months after castration, the appearance of the bones was becoming better and the bone productive changes were decreasing.

Fig. 3.—Roentgenogram 70 days after castration.

Fig. 4.—Roentgenogram 6 months after castration.

It is also of interest to point out that Farrow and Adair[23] noted an elevation of serum "alkaline" phosphatase following bilateral orchiectomy in a case of metastatic *mammary* cancer in a male. Radiographic evidence of increased density at the site of metastatic bone lesions interpreted as a reflection of increased calcification and healing was noted in their case.

Clinical History: The patient, a Negro man, aged 71, was admitted to St. Philip Hospital January 23, 1942. For the previous six months he had had dribbling, frequency and nocturia 4 to 5 times. There had been a gradual progressive edema of the lower extremities with the edema much more pronounced in the left leg. In addition there was pain in both legs extending well up into the lumbar region of the back. The pain had been constant, dull and aching and for the previous few weeks had been severe. For the previous four months this patient had spent most of the time in bed, as he could not get about because of the pain and edema. There was no history of respiratory difficulty. During a previous hospitalization in July, 1940, the diagnosis of carcinoma of the prostate had been made. At that time rectal examination revealed a hard, nodular prostate several times the normal size which was clinically a definite carcinoma. Roentgenograms revealed increased calcification of the 5th lumbar vertebra and iliac bone which appeared to be metastatic lesions. There were prominent inguinal lymph nodes which were excised. The pathological report was chronic lymphadenitis. He received, during this hospitalization, roentgen therapy (9,000 r) for carcinoma of the prostate.

Physical examination on admission January 23, 1942, was essentially negative except for the abdomen, prostate and extremities. Rectal examination revealed a very firm and nodular prostate, three times normal size. In the abdomen there was a suggestion of a non-tender mass in the left lower quadrant. There was slight pitting edema over the

sacral area. There was a massive pitting edema of the entire left leg and a moderate amount of edema of the right leg. Palpable lymph glands were not present. Roentgenograms showed bone productive metastases to the pelvic bones, lower two lumbar vertebrae and sacrum (fig. 2). The chest plate suggested miliary mottling that could be early metastases. Laboratory findings of interest were as follows: Blood: 3,820,000 RBC; 66 per cent hemoglobin (Sahli); 28 mg. non-protein nitrogen per hundred cc.; negative Wassermann. Urine: specific gravity 1.020; no albumin, sugar or acetone; 5 ounces residual urine; phenolsulfonephthalein excretion was 45 per cent in two hours.

The diagnosis of carcinoma of the prostate was confirmed on rectal examination by Dr. A. I. Dodson, Chief of G.U. staff. The patient would not consent to orchiectomy at this time and remained in bed in the hospital. On January 31, the acid phosphatase was 705 Gutman units, and a week later it was 973 units. Consent was obtained for the operation and a bilateral orchiectomy was performed February 9, 1942.

One week after orchiectomy the patient was sitting in a chair daily. On February 25, he was noted to have a more cheerful outlook, and the pain and edema had decreased slightly. Two days later the edema was noted to be definitely decreasing. On March 15 the edema was gone, and the patient was up and about. The abdominal mass noted previously had disappeared. There was still some pain in the lower back. The acid phosphatase at this time was 115 Gutman units. On April 21, the patient was discharged—to be followed by the Out-Patient Department. His condition had improved remarkably. He still had some frequency and occasional nocturia, 1 to 2 times. There was still some pain in the lumbar region of the back but to a much less degree. All edema had disappeared. Roentgenograms at this time (70 days after castration) showed bone productive changes in the lower three lumbar vertebrae, sacrum, pelvic bones and both hips, more marked in the left pubic, ischial, and iliac bones, sacrum and vertebral bodies with only slight changes in the right pelvis (fig. 3).

Six months after castration definite improvement in bony appearances was noted. There was a diminution in bone productive metastases in both iliac bones and right pubis and a more uniform appearance of the left pubic ischial bones (Fig. 4). Rectal examination revealed the prostate to have decreased markedly in size. The condition of the patient was still good. He still had some pain in the back and nocturia 1 to 2 times. He was up and about doing light duties.

Examination of the patient one year after orchiectomy revealed a moderate sized, non-tender prostate. There were no urinary compliants; he still had some "aching" in the lumbar region of the back. The patient was otherwise in good condition and doing light work. (Added to proof sheet.)

We are indebted to Dr. F. B. Mandeville, Professor of Radiology, for the use of the roentgenograms included in this article and for his interpretation of them.

SUMMARY

A study of serum "acid" and "alkaline" phosphatases over a period of 6 months following surgical castration in a case of metastatic prostatic carcinoma having an unusually high pre-castration "acid" phosphatase activity of 973 Gutman units is presented. This unusually high "acid" phosphatase activity returned approximately to normal in the 12th post-operative week, in contrast to the shorter time (7 to 12 days) noted by Huggins and Hodges in their studies on castration of patients whose initial serum "acid" phosphatase values were very much lower. A post-castration elevation in serum "alkaline" phosphatase with subsequent return to normal was found in this patient. Clinical history of the patient in whom marked improvement followed castration is presented. Roentgenograms of the metastatic lesions taken before and after castration are included in the discussion.

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BENIGN AND MALIGNANT LESIONS OF THE URACHUS
With Special Reference to the Colloid Carcinoma of the Bladder*

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This presentation has been prompted by the opportunity we have had during the past 18 months of studying several instances of diseases of the urachus.

Such lesions are apparently rare. Text-books deal with them very briefly and one has to collect information from various scattered sources. Still, one gains the impression that diseases of the urachus are more frequent than the statistics would make us believe, since their true nature is often not recognized. A proper diagnosis, however, is not only desirable for the sake of scientific correctness but is of distinct practical importance. The lesions of the urachus require a particular therapeutic approach, and such approach is possible only on the basis of a correct diagnosis. It seemed worthwhile, therefore, to call attention to this little known chapter of pathology.

Let us consider first what exactly the urachus is and from which embryological structures it derives. Only on this basis shall we understand the pathological deviations.

In post-embryonic life, the urachus represents an involuted structure. Originally it was a part of the

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fetal bladder. As you will remember, the bladder is formed, except for the trigone and the region of the ureteral openings, by a division of the common cavity of the cloaca by a transverse vertical septum. This septum establishes a posteriorly located organ, the rectum, and an anteriorly situated organ, the bladder. It is important to remember this common origin if one wants to understand certain pathologic conditions in the bladder, e.g., the formation of glands in glandular cystitis, the finding of mucus producing epithelium in exstrophy of the bladder, and the histogenesis of the adenocarcinomas of the bladder which, in their microscopic picture, cannot be distinguished from a cancer of the rectum. Normally, however, the primitive epithelium lining the cloaca is modified to meet the physiologic purposes of the final organ. The fetal bladder extends up to the navel where it continues into the allantoic stalk which also carries the umbilical vessels and is better known as the umbilical cord. Eventually, the upper half of the bladder narrows, the lower half retires behind the protective barrier of the pubic bone and all there remains of the upper half is a duct like structure, the urachus.

We distinguish two main portions of the urachus (Fig. 1): The upper portion obliterates completely and becomes a fibrous structure which, with the equally obliterated umbilical arteries, forms the so-called ligamentum commune. The urachus proper is usually 4-5 cm. long. It has a supravesical portion and an intramural portion which latter is subdivided again in an intramuscular and intramucosal part. Even under normal circumstances, the urachus never obliterates completely but remains partly or completely patent. In about one-third of the cases, there is an open communication with the bladder. However, urine does not enter it because a small transverse fold of mucosa acts as a valve. Only when there is increased back pressure due to an obstruction of the urinary flow or increased intra-abdominal pressure, urine may be forced past this valve. Cystic widenings and lateral pouches are frequent. The lumen is lined with 1-3 layers of epithelium which has no basal membrane and which desquamates freely. These cells have retained the potentialities of the cloacal epithelium, and it is, therefore, not surprising if we find them provided with considerable proliferative activity.

The whole structure is, of course, situated preperitoneally in the space of Retzius.

Involution, patency, communication with the bladder, cystic widenings, epithelial proliferation and desquamation are characteristic of the urachus and are in themselves of no clinical significance. It is only when one or several of these properties deviate too far from the normal limits or when infection intervenes, that symptoms appear and the physician is needed.

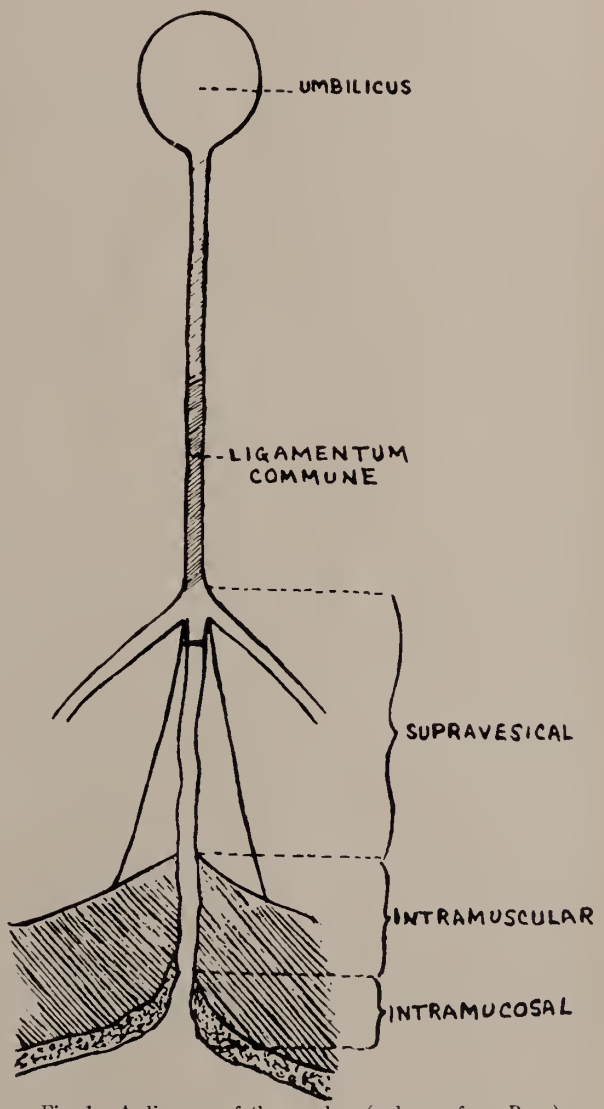

Fig. 1.—A diagram of the urachus (redrawn from Begg).

A brief list of the pathologic conditions follows:

1. Unformed urachus or persistent fetal bladder.
2. Patent urachus—
   - complete: vesico-umbilical fistula
   - incomplete: umbilical fistula
     - vesical fistula or diverticulum of bladder.

3. Cysts.
4. Tumors—
   benign
   malignant.

Important complicating feature of 1-3: inflammation, specific and non-specific.

When the urachus does not form at all, it means that the upper end of the bladder fails to narrow and the bladder reaches up to the umbilicus. Or, as it has been seen in other cases, it narrows but does not separate from the bladder and the cavity of the latter is continued by a canal to the umbilicus. As a result, we find urine draining from the umbilicus, although this may not be so because sometimes the umbilical end is closed. Frequently, an umbilical hernia is an associated finding. We have had occasion to study one such case.

This girl had been operated on for an umbilical hernia two hours after birth. Following this operation, there was a drainage of urine-like fluid from the umbilicus for about a year. At the age of five, she had a period of pyuria and passed a stone. About five weeks before her final admission, at the age of 11, she passed another stone and was treated at another hospital for chronic cystitis and pyelonephritis. On the day of her admission, she suddenly became very restless and began having convulsions. These convulsions continued at the hospital; she presented the picture of overwhelming toxemia and died 36 hours after admission. The girl was markedly under-developed. The bladder was large and pear-shaped (Fig. 2). It extended to the umbilicus to which it was attached by adhesions. It was severely inflamed and its wall was thickened. A concretion of anvil shape was lodged in the narrow upper portion. This case illustrates a possible although rare source of urinary concretions in children.

When we consider next the fistulas, we must realize that it is only when there is a communication with the bladder that urine may be found draining from the umbilicus. Otherwise, the drainage is serous or purulent. Although not all umbilical fistulas are of urachal origin, most of them probably are. It is possible to excise the tract extraperitoneally. It is important to follow it down and resect it as close to the bladder as feasible. The following micrograph (Fig. 3) shows a cross section from the patent urachus diagnosed and removed in a 20 year old man. He had suffered for several years with attacks of indefinite abdominal pain until, a few weeks before he came to the hospital, a fistula broke open at the umbilicus.

The vesically open urachus impresses as a medially located diverticulum. It has a certain importance because it is from here that certain types of rebellious chronic cystitis are maintained. Not all of the fistulas are congenital. Some are acquired in later life when increased back pressure due to lower obstructions forces the urine past the mucosal valve which normally closes the urachus and thus may open a previously closed small canal. A cystogram will reveal the condition.

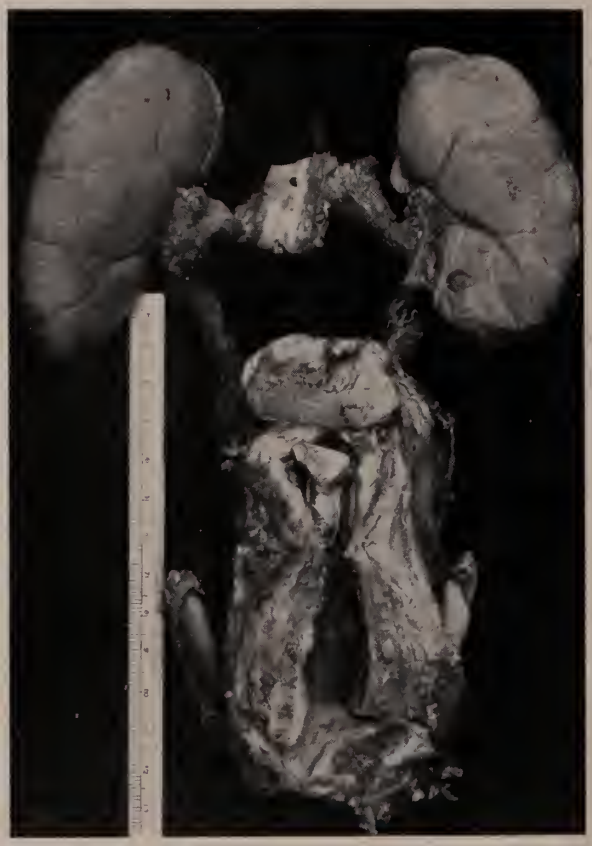

Fig. 2.—Persistent fetal bladder with concretion in upper narrow portion.

Probably most of the cysts are retention cysts. More than half of them are found close to the bladder in which some of them open. They sometimes attain tremendous size. The largest described contained 20,000 cc. of urine-like fluid. Their contents vary. One finds serous matter, urine, pus, blood, desquamated cells, and, rarely, concretions. The diagnosis is not easy. Rankin and Parker men-

tion that relief by forward stooping and accentuation of pain by deep breathing are worth-while diagnostic helps. Their therapy is, of course, surgical. When infected, it may be necessary first to drain them and to remove them later. An unfortunate complication is the perforation of an infected cyst into the peritoneal cavity. In other cases, the size alone may necessitate surgery. Many of the smaller cysts and most cases of partial and complete patency become of clinical importance only after they have become infected. While the inflammation usually is non-specific, cases of tuberculous infection have been described, one followed by tuberculous peritonitis.

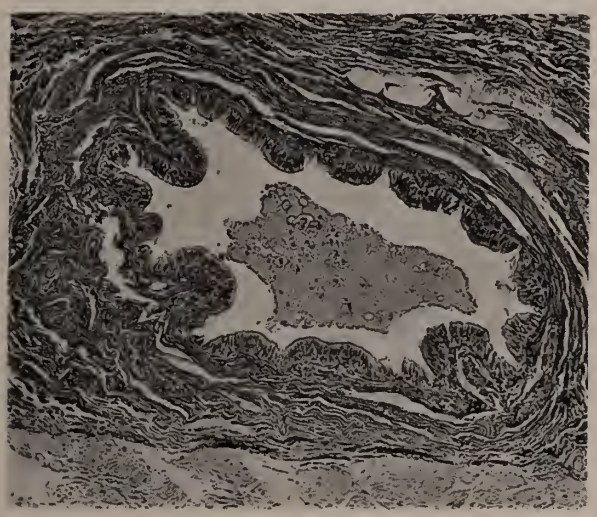

Fig. 3.—Patent urachus.

If we now turn our attention to the tumors, we can dismiss those of mesodermal type very briefly. Fibromas, fibromyomas and sarcomas are found only rarely and in association with the ligamentum commune. Near the bladder, they are exceedingly rare. They have never been properly diagnosed before operation. The tumors originating from the urachus proper are prevalently epithelial tumors and, with the exception of a few isolated fibro-adenomas, they are adenocarcinomas. Most of them produce mucus, and their histological picture does not differ from that of an adenocarcinoma of the rectum. Some of them originate in the supravesical portion of the urachus. They then appear as firm growths which may attain considerable size without causing any symptoms, or only vague abdominal discomfort. They become attached to the peritoneum without invading it. Metastases are rare, at least before operation. Of much greater interest are those tumors which arise from the intramural portion of the urachus. Here they must be differentiated from the other more common types of bladder tumors. Adenocarcinomas of the bladder are rare. They represent only about one-half per cent of all malignant tumors of the bladder and not all of them are of urachal origin. Some originate from aberrant prostatic and urethral glands. These are usually located in the bladder neck and in the lateral wall. Others have been traced to metaplastic changes in the bladder mucosa. However, those located in the vertex, in the midline or not far from it, are of urachal origin. Since they develop within the wall they affect the mucosa only secondarily. If a tumor is pedunculated, its urachal origin becomes doubtful although Begg has seen urachal carcinomas hanging into the bladder by a pedicle in the fashion of a pedunculated myoma protruding from the uterine cervix. Usually, however, the tumor forms first a bulge covered by normal or edematous mucosa. Only later the surface ulcerates and then one may notice the mucoid material oozing from it. The following micrograph (Fig. 4) represents a section from such

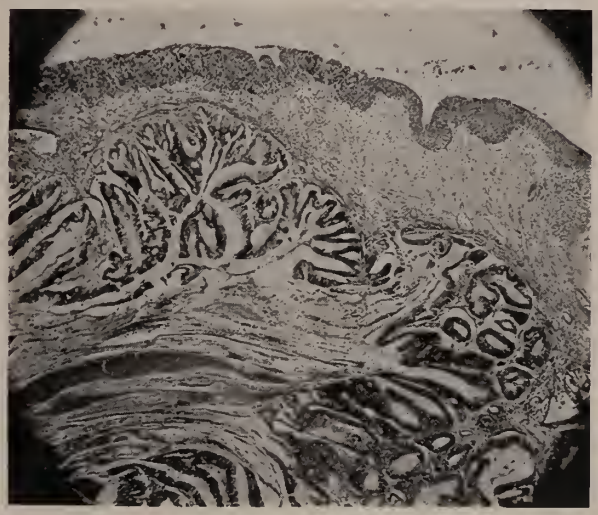

Fig. 4.—Colloid adenocarcinoma of urachus invading the wall of the bladder. Normal mucosa at top.

a tumor, showing the tumor underneath the normal epithelium of the bladder. This tumor was removed from a 26 year old man. Incidentally, this is the youngest patient ever seen with this lesion. One other patient, aged 29, has been observed, while the majority of the patients are over 40 years old. This young man was troubled for a few weeks with dysuria and hematuria, the

blood appearing at the end of the micturition. He had had a similar episode one year before. At his first admission, a urethral stricture was encountered and the bladder seemed normal. However, four weeks later, he came back because he had now severe pain, and this time a broad, apparently malignant ulcer was seen in the dome. A tumor the size of a lemon was found in the posterior wall of the vertex somewhat to the left and was excised with a wide margin. No radiation was given. The patient has been seen repeatedly and is still well after seven months.

Usually the prognosis is poor. The management in this type of tumor is surgical. While for the papillomatous carcinoma radiation and semi-surgical procedures as fulguration have their definite place, the colloid adenocarcinomas are radio-resistant and the only way of treating them is by radical excision. As a matter of fact, Begg recommends a complete dissection of the entire space of Retzius in order to forestall the frequent recurrences in this area.

In closing, I wish to re-emphasize the fact that the lesions, benign and malignant, of the urachus represent an interesting chapter of pathology of practical importance as to their diagnosis and treatment.

NOTE: While this paper was in print, the following publications dealing with diseases of the urachus have appeared:

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DISCUSSION

DR. A. I. DODSON, Richmond: We are greatly indebted to Dr. Dreyfuss for this excellent paper. He has presented a clear and concise description of the embryological relationship of the urachus to the urinary tract and of the pathological processes that may occur when involution of the urachus becomes arrested. Arrested development, abnormal growth or incomplete involution are frequently encountered in diseases of the urinary tract. A thorough knowledge of embryology is essential for an adequate understanding of such pathological processes.

Although disease of the urachus was recognized in 1550, only 154 cases could be found in the literature in 1936 when the last complete review was published. Certainly diseases of this structure occur more frequently than is indicated by the number of reported cases.

Incomplete obliteration is the usual cause of pathological processes arising from the urachus. Inflammation of the umbilicus, cystitis, or urachal cysts may occur, depending upon the location of the patency. Complete patency is very rare and always associated with an obstructive lesion at the bladder orifice or in the urethra. Cyst is the most frequent disease of the urachus requiring surgical treatment. These cysts usually present a tubular mass in the mid-line of the abdomen below the umbilicus. Occasionally the cyst grows to considerable size and presents the appearance of an abdominal tumor. Such a cyst weighing 751.27 grams was removed by Dr. J. Shelton Horsley from a four-year-old boy. It was strongly attached to the umbilicus and to the fundus of the bladder. My former associate, Dr. Charles M. Nelson, treated a patient with an infected cyst. The patient complained of abdominal pain and there was a tender mass extending from the pubis to the unbilicus. Following preliminary drainage, the cyst wall was excised. I have treated two patients with carcinoma of the bladder apparently arising from the intramural portion of the urachus. In each case the upper third of the bladder including the adherent peritoneum was excised. One of these patients is in good health three years following the operation. The other patient died six months following operation from metastases to the lungs.

FURTHER EXPERIENCE WITH TUBAL DIVISION IN SALPINGITIS*

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The reluctance of gynecologists to discontinue salpingectomy in favor of tubal resection has not given the latter operation for curing salpingitis the chance it deserves. Tubal resection was introduced first by Falk in 1936, and since then has not had, as far as I know, very wide acceptance. In 1939, I reported a series of cases and have continued to use the operation with much satisfaction. All the cases reported in that paper, which I have been able to follow, have had excellent results from their tubal ligation and division.

Several cases of severe salpingitis have been operated in this manner, and the results are such that I believe the operation should prove of merit in all cases of gonococcal salpingitis regardless of its severity.

The first report of ligating tubes in salpingitis, that I have been able to discover, is that of Elgart in 1934, who placed ligatures at the fimbriated ends in order to prevent the escape of purulent material which he believed produced pelvic peritonitis. He reported 50 cases, of which two were reoperated for other conditions. In these two the inflammation had completely subsided in the ligated tubes which, apparently, had given no further trouble. Falk in 1936 and Falk and Weitzner in 1939 reported a series of cases in which the tubes were ligated and resected at the isthmus with excellent results. In 1939 I reported a series of cases in which the tubes were divided close to the fundus without resecting at the isthmus but taking particular care to lift the uterus and its adnexae out of the pelvic cavity, where they are usually adherent, and restoring the uterus and ovaries, as far as practicable in each case, to their normal position. The paucity of the literature on this subject is all the more surprising in view of the fact that the analogous procedure in the male, ligation of the vas to prevent epididymitis, is well recognized as an operation with nearly perfect results. Ligation of the tubes similarly prevents the occurrence of salpingitis. In fact, Falk as one of his original premises for the rationale of this procedure, points out that salpingitis has never been found in a woman who has had her tubes ligated for sterilization purposes.

Salpingitis is a disease which is self-limited and recurrent in character, progressing by episodes or attacks. After this operation the disease will cure itself, and will not be aggravated or recur as the focus of infection and reinfection, which is in the uterine cervix, has been completely disconnected.

It is not necessary to operate on all cases of salpingitis. Many will subside of their own accord or under conservative treatment. But in those cases in which operation becomes necessary, salpingectomy leaves much to be desired. Often the tubes and the ovaries are in one mass in which it is not feasible to separate the tube from the ovary, and both are removed. Immediately the endocrine system is affected and, except in the most phlegmatic, the nervous system as well. I feel that regardless of the gross appearance of the ovary the degree to which the ovarian cells have been damaged by the inflammatory process cannot be judged, as I have found by experience that the majority will resume their secretory activities when the inflammation has subsided; the only exception to this is when the ovary has degenerated into one complete cyst. In following some of these patients, I have found that, in spite of the severity of the infection, in only one case, which will be reported in detail, was there any alteration in the menstrual cycle nor did any of the neurogenic symptoms occur which are so characteristic in castrated young women. This includes those cases in which frank abscesses of the tubo-ovarian mass were present.

Removal of the tubes alone is often followed by a series of events which sometimes require years to develop. Frequently the pain itself does not disappear, but more often after a period of six months to three years, abnormalities of the menstrual cycle appear, usually in the form of metrorrhagia. In addition, nervous phenomena and pelvic discomforts gradually assert themselves, and the latter, just as frequently as the former, bring the patient to reoperation. In five such cases which had had their salpingectomy done elsewhere, it was necessary to do another operation when the uterus and ovaries

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

were removed. These ovaries appeared to be grossly normal, but with striking regularity the pathologist reported that "the ovarian tissue had been replaced by multiple minute cysts and that the endometrium had undergone atrophic changes". Absence of the ovarian hormones accounts for the abnormalities of the menstrual cycle and nervous phenomena. My impression, at the time of operation, was the degeneration of the ovaries was not due to the disease but to the probability that their circulation had been altered by the scar tissue, contractures and adhesions which follow salpingectomies. Normally the ovaries, tubes and uterus are freely movable within certain limits, but after salpingectomy this mobility is decidedly reduced. Although every effort is made to leave this vascular system intact, it is largely nullified by the fibrosis and contractures incidental to the healing of any inflammatory process. There is no reason why this area should be an exception to this rule when indeed it may be especially vulnerable because of the nature and disposition of the tissues involved. This explanation may not be adequate but it is difficult for me to believe that these pelves were left in the condition in which I found them later on.

Thirty-two cases have been operated in this manner since my last report, only one of which required a secondary operation. This case, already mentioned, is to be described in detail for the purpose of demonstrating what happens to the tubes and ovaries after tubal division.

A colored woman, age 30, presented the usual symptoms and signs of severe pelvic inflammatory disease. Upon pelvic examination, all the viscera seemed to be in one large firm tender mass. After a waiting period of two weeks her fever subsided to not quite normal and operation was done. Through a midline incision, the uterus, tubes and ovaries were found matted together to such a degree that it was difficult to make out the individual structures. The fundus of the uterus was finally uncovered together with the medial ends of the tubes. These were cut and ligated, but since the structures were so firmly fixed, no effort was made to attach the lateral cut end to the anterior surface of the uterus. In doing this dissection, which was limited to the fundus of the uterus, numerous small pus pockets were opened and instead of the pus being the characteristic greenish yellow, it was a deep brown with a very offensive odor. The rest of the inflammatory mass was not disturbed. I seldom drain a case of salpingitis but in this case I thought it was necessary. Her convalescence proceeded uneventfully and she was discharged from the hospital in three weeks.

About a year later she presented herself complaining of metrorrhagia, with moderate pain in both inguinal regions, and extremely nervous. Pelvic examination revealed some thickening in the adnexal regions, with the uterus fixed and only moderately tender. While it may have been possible to relieve this patient with x-ray and estrogenic therapy, especially as regards the bleeding, I felt that surgery offered a more positive cure and, in addition, afforded the opportunity to observe what takes place in the inflammatory process after tubal division.

At operation the tubes were thickened but not inflamed and the ovaries were slightly larger than normal in size. The left ovary was a complete cyst. Microscopic study (Dr. Regena C. Beck) demonstrated that the inflammation had entirely subsided. The detailed description of the organs removed follows:

(1) Uterus weighs 56 grams and measures 5.5 x 4.5 cm. Grossly the uterus feels extremely firm and cuts with marked resistance.

Microscopic study shows marked fibrosis throughout the myometrium. The stumps of tubes connected with the uterus are sealed due to a marked fibrosis throughout which there is infiltration of lymphocytes and mast cells. The endometrium shows the early proliferative phase (atrophic). There is no evidence of malignancy nor inflammatory change.

(2) One tube measures 5 x 2 cm. The other measures 3.5 x 1 cm. The tubes are sealed at both ends. They are thick walled and filled with clear fluid.

Microscopic study of the tubes shows marked fibrosis throughout with complete destruction of the lining mucosa. There are a few lymphocytes and mast cells scattered throughout the fibrous tissues.

(3) One ovary measures 2 x 1.5 cm. The ovarian tissue is replaced by marked fibrosis and many small simple cysts. Microscopic study does not show any evidence of inflammatory reaction.

The other ovary measures 4 x 4 cm. The ovarian tissue is completely replaced by one large thick-walled simple cyst with hemorrhage into the contents. Microscopic study of sections of the wall shows only fibrosis. There is no evidence of inflammatory reaction.

It must be borne in mind that removal of these structures at the first operation would have been

extremely dangerous and simple tubal division was the means of reducing the inflammatory reaction, permitting the second operation which has resulted, so far, in a complete recovery.

CONCLUSION

A total of 63 cases of salpingitis has now been operated by simply dividing the tubes close to the uterus, attaching the lateral cut end to the anterior surface of the uterus and, where possible, restoring the pelvic structures to their normal position. In all cases, including the two which were re-operated, subsequent examination revealed the inflammatory reaction had completely subsided. There was no mortality. Sixty-one cases are symptom free without any further surgery, the endocrine system is intact and the normal pelvic functions have been entirely restored with the exception of reproduction, which already had been lost. In eight of these cases the inflammatory process was so severe that removal of any of the diseased tissues would not only have endangered the intestines entangled in the friable inflamed mass, but would have been extremely hazardous to life. Many authors have reported the necessity for re-operation after salpingectomy as between 5 and 6 per cent of their cases but in this series re-operation was necessary in only 3 and three-tenths per cent. It is for these reasons that I believe tubal division is preferable to tubal removal in gonococcal salpingitis.

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18 Liberty Street.

DISCUSSION

DR. PAUL DAVIS, Roanoke: I am one of the reluctant gynecologists Dr. Jacobson mentions. Frankly, I have not used the operation he describes.

When I first read Dr. Falk's description a number of years ago it impressed me as one of those which are usually discontinued as the late results begin to return to the operator.

Since the advent of sulfanilamide I have been seeing very few cases of troublesome recurrent salpingitis. In those who come to operation there is usually sufficient additional pathology to warrant a more extensive procedure than simple ligation of the tubes.

In young girls where we are particularly anxious to preserve at least the hope for future chances of reproduction, an operation such as this or, possibly, one such as suggested by Dr. Morris, is good to remember. Dr. Morris in his book, "Fifty Years a Surgeon", suggests laying the tubes open and draining all pus pockets in the pelvis. Later he does a secondary operation.

Either of these operations, it seems to me, has a rather limited field of usefulness.

I wish to thank Dr. Jacobson for again calling Dr. Falk's operation to our attention. I am glad to hear of its successful use in his hands, and shall probably try it myself in the near future.

DR. JACOBSON, closing discussion: I agree with Dr. Davis, that it is not necessary to operate on all cases of salpingitis. This I stated in my paper; but in those cases which do come to operation I disagree with the proposition that any additional pathology other than a complete cyst of an ovary warrants a more extensive procedure.

On many occasions I have gone out of my way and taken some risks in order to discover if this inflammatory process will subside when the focus of infection is disconnected. About seven months ago I had a case in a white married woman of 25 in which one tube was decidedly thickened and firm, the other much enlarged and filled with pus. Both tubes could easily have been removed. I aspirated the one filled with pus through a large needle removing about 50 cc., and then cut and ligated both tubes in the usual manner. So far she has been completely asymptomatic and pelvic examination reveals no tenderness or thickening in the abnexal regions.

I have always considered reproduction highly improbable in any case of salpingitis which does not respond to conservative treatment and that operation was done largely for the relief of disabling symptoms.

Probably it requires a firmer faith in the soundness of this theory to resist the temptation of removing such obviously infected tissues. Cutting out this type of inflammation, while nearly as easily done as removing appendices, is not without much more unfortunate sequelae.

NON-PENETRATING FOREIGN BODIES OF THE EYE

WILLIAM F. HATCHER, M.D., F.A.C.S.,
Roanoke, Virginia.

In industrial areas, injuries by foreign bodies probably constitute more than one-half of all eye injuries. Penerating wounds of the eye due to foreign bodies will not be discussed in this article, inasmuch as such injuries are seldom treated by the family physician. It should be borne in mind, however, that in rendering first aid in a case of a penetrating wound of the eye, the injured eye should be closed by a patch and bandage.

Persons with foreign bodies in the palpebral or bulbar conjunctiva, or in the cornea, frequently seek relief from laymen and physicians. The subjective symptoms may be helpful or misleading. A foreign body imbedded in the center of the cornea may produce intermittent symptoms and very little reaction in the eye. A foreign body under the upper lid gives immediate and constant evidence of its presence. In many instances, patients complain of a sensation of a foreign body when none is present. In these cases, there is sometimes a history of a foreign body having entered the eye, but it is no longer there on examination. In other cases, there has been an inflammatory reaction in the palpebral conjunctiva of the upper lid. The resulting roughness of the conjunctiva produces an intermittent sensation of one of several small foreign bodies. In all cases of redness or discomfort of the eyes, the presence of a foreign substance should be suspected.

The conjunctiva, a vascular membrane, reacts in a classical manner to the irritation of a foreign body. The conjunctiva immediately around the irritating substance, as well as the portion of conjunctiva over which the substance passes during active winking, becomes engorged. Nature endeavors to alleviate the situation by flushing the eye with tears and removing the irritation of light and movement by photophobia and blepharospasm. These symptoms combined with pain greatly reduce the usefulness of the eye. The intensity of the conjunctival reaction depends largely upon the type of foreign body, the location of the foreign body, and the length of time it has been present. Conversely, the rapidity and completeness of recovery after removal of the foreign body depends upon the above conditions, together with the presence or absence of infection.

The cornea, an avascular transparent structure, reacts in its own peculiar way to the presence of a foreign body. There is a local zone of edema and ulceration with a peripheral zone of congestion at the conjunctivo-corneal junction (limbus conjunctivae). Frequently, the pain and discomfort caused by a corneal foreign body is referred under the upper lid. The presence or absence of a scar of the cornea following an imbedded foreign body will depend upon the penetration of the foreign body or any resultant ulceration. Non-complicated foreign bodies removed from the corneal epithelium do not leave scars. If, however, the foreign body or associated ulceration causes a solution of continuity of Bowman's anterior glass membrane, a corneal scar results. Fortunately, Bowman's membrane is very resistant and may be curretted quite readily with a dull spud. The corneal epithelium regenerates very rapidly under favorable circumstances.

The substances found as foreign bodies in the eyes are innumerable. A few merit special mention: Particles of iron, emery, cinders, and gunpowder stain the surrounding tissue. Particles of glass, paint scales and fish scales are particularly difficult to see. In the summer, insects and plant material frequently act as transitory foreign bodies. The irritating action of in-turned eyelashes must also be borne in mind.

To discover foreign bodies on the conjunctiva or in the cornea, normal near vision is essential. Good illumination, a condensing lens, and a monocular or binocular loupe are necessary adjuncts.

A dilute solution of the sodium salt of fluorescein instilled in the eye will frequently outline, by a green stain, a foreign body otherwise undetected. This dye also temporarily stains denuded corneal areas.

The removal of a foreign body from the lower culdesac is very simple, provided the patient turns the eye well upward. A foreign body under the upper lid is easily removed, provided the patient looks constantly downward while the upper lid is

everted. Eversion of the upper lid is readily accomplished by pressing any small rod-like object, such as an applicator or a wooden match, firmly on the eyelid immediately above the upper margin of the tarsal cartilage while eyelid is turned upward by the firmly grasped cilia. A sterile applicator wrapped with moist cotton is suitable for removing superficial substances.

To remove imbedded foreign bodies, particularly in the cornea, a metallic spud is required. It is also necessary to anesthetize the eye. For this purpose, solutions are employed of holocaine 2 per cent, butyn 2 per cent, pontocaine ½ per cent, or if the intra-ocular tension is normal, cocaine 2 per cent. A drop of anesthetic solution instilled in the eye at one minute intervals for two or three doses produces excellent superficial anesthesia.

Incidental conjunctivitis must be treated, free drainage being allowed by leaving the eye open. Following the removal of a foreign body from the cornea, antiseptic ointment, such as bichloride of mercury, is instilled and the eye closed by a patch until the epithelium is regenerated. Yellow oxide of mercury is an irritant and not suitable for treatment of an irritated or inflamed eye.

When the corneal epithelium has been abraded and the sensory nerve endings are exposed, patients frequently complain of a sensation of a foreign body in the eye. Products of explosion, such as gunpowder, are well borne by the external eye. Frequently, it is inadvisable to attempt complete removal of all such foreign bodies at first treatment. After a few hours or days, the foreign particles work nearer the surface and are more easily and safely removed.

409 *Medical Arts Building.*

MISCELLANEOUS

A Special Warning Bulletin

Regarding Epidemic Kerato-conjunctivitis has been prepared jointly by the United States Public Health Service and the Committee on Industrial Ophthalmology of the American Medical Association, which should be of interest to all physicians.

It is recognized that relatively few cases of epidemic kerato-conjunctivitis may be reported in some areas which are not so essentially industrial as others, but the condition has appeared so extensively throughout the country that the Committee on Industrial Ophthalmology hopes physicians everywhere may be prepared to meet the situation.

EPIDEMIC KERATO-CONJUNCTIVITIS.

Incubation period. Five to ten days.

Clinical Manifestations. The onset may be preceded by a low fever and mild generalized malaise. The local ocular symptoms are merely those of a foreign body or conjunctival irritation. One eye is usually affected first, and in a large percentage of cases the second eye becomes infected within five to eight days. Preauricular and submaxillary glandular involvement with tenderness is common in a high percentage of cases.

Edema of the lids and the conjunctiva, especially the transitional fold, is very frequent. The conjunctiva presents the appearance of a simple purulent conjunctivitis but with little or no formation of pus. Small areas of pseudo-membrane are not infrequent and when removed leave either small white dotted points or some bleeding points. The bulbar conjunctiva becomes edematous early. At this stage, there is some lacrimation and photophobia, but real pain and blepharo-spasm do not appear until the cornea becomes involved.

The percentage of cases in which corneal involvement occurs varies from 50 per cent to 90 per cent. In six to twelve days after the conjunctivitis appears, the cornea becomes involved by the appearance of discrete gray infiltrates that lie in and immediately under the epithelial layer of the cornea. They may be confined to the periphery of the cornea but in a large percentage of cases involve the pupillary area of the cornea directly. These infiltrates are discrete and seldom become complicated by an erosion of the corneal epithelium with resultant staining with fluorescin. The extent of visual impairment depends upon the number of infiltrates and their location.

Clinical Course: The disease is self-limited. In the majority of instances, the conjunctivitis disappears spontaneously in 14 to 18 days. The corneal complication may disappear in seven days or may

last for many months. The longer they persist the greater is the danger of permanent visual impairment.

Laboratory Findings: Scrapings of the conjunctiva show a preponderance of monocytes. Cultures and smears are either negative or show the usual contaminations.

Treatment: There is no specific treatment that has shown a definite influence upon the course of the disease. During the acute stage the eyes should be kept clean with irrigations of boric acid, normal saline, or one to five thousand oxycyanid of mercury. If there is much photophobia, 1 per cent holocaine may be instilled at frequent intervals. Five per cent sulfathiazole ointment has been used, as has 5 per cent solution of sodium sulfathiazole sesquihydrate. For persistent corneal infiltrates, x-ray has seemingly yielded some results.

Period of Infectivity: It is not yet known how long the danger of transmission to others exists. At present for practical purposes a sufferer from Epidemic Kerato-conjunctivitis may be allowed to return to work when the active conjunctivitis has disappeared.

Preventive Measures: At present the only preventive measure known is complete isolation of infected persons. Inasmuch as the disease has been transmitted through medical personnel, the most meticulous asepsis must be insisted upon. Not only must physicians and nurses wash their hands thoroughly with soap and water after each patient, but also eye droppers, solutions, instruments, etc., must be sterilized to prevent infection of non-contaminated persons. The infected individual must be told of the danger of transmission of this disease to others, not only in the plant, but even in the home surroundings. It is suggested that in industrial plants where Epidemic Kerato-conjunctivitis has made its appearance the following methods of procedure be adopted:

1. In smaller plants with a limited personnel, every individual with a red eye should be stopped at the entrance of the plant and sent direct to the plant physician to determine whether or not Epidemic Kerato-conjunctivitis is present.

   In larger plants where such a procedure is not possible, supervisors and foremen should be instructed in detail to make rounds immediately when a fresh shift starts, and send any individual with a red eye to the medical office.
2. If the cases are to be treated at the medical department of the plant, a separate room should be set aside for such cases and in that room there must be exercised the most scrupulous asepsis even to washing off the arms of the chairs in which the patients sit. Aside from the aseptic and separate care of the recognized cases of the disease, special cleanliness of the hands of the physician in the general clinic should be maintained, with the use of an effective disinfectant between cases, lest the infection be spread by means of undiagnosed cases, especially those suspected of having foreign bodies in the eye
3. Every case of Epidemic Kerato-conjunctivitis should be excluded from the communal facilities of the plant until the inflammation has subsided to the point where the plant physician considers it no longer transmissible.
4. Explicit instructions should be given to every individual regarding the danger of transmission, and emphasizing the decrease in the war effort as a result of the time lost from Epidemic Kerato-conjunctivitis.
5. The local health authorities should be notified immediately of the existence of individual cases.

War Demands for Birth Certificates.

Being interested in a notice in the February *Journal of the Michigan State Medical Society* with regard to the large number of requests for copies of birth certificates from the Michigan Department of Health in 1942, in order to establish citizenship, and the cost to taxpayers for this work, Dr. W. A. Plecker, State Registrar, was asked for a report as to this feature of his work in Virginia. His statement follows:

The great increase in work thrown upon the Bureau of Vital Statistics by war demands for birth certificates is well illustrated by a summary of the number of certificates of the several types sent out during 1942 as follows:

57,924	Certified copies of births since June 14, 1912, paid for.
2,227	Certified copies of births since June 14, 1912, for Veterans Bureau and State requirements.
38,745	Delayed certificates—prior to June 14, 1912, paid for.
884	Marriage transcripts, paid for.
6,409	Early births—from 1853 through 1896, paid for.
15,802	School and child labor verifications without certified copies—free.
122,041	

This represents cash earnings for the State Treasury by the Bureau of Vital Statistics of $75,652.05—approximately the cost of its maintenance and is in addition to the regular statistical work for which the Bureau was set up in 1912.

Until quite recently, since January 1, this was accomplished with a force but little above ordinary needs. It was done, even as well as it was by transferring from indexing and other work every clerk whose work could possibly be postponed for the future. An unimaginable condition of chaos was produced, extremely humiliating to officials who prided themselves upon keeping their work up to the mark. At one time the work was five or six weeks behind, with an accumulation of over 6,000 requests for searches, "as quick as possible," "will lose my job if I don't get a certificate by the end of the week," "can't get into the Air Corps (navy or army) until I get my birth certificate," etc., etc. The letters of criticism and abuse, forty or fifty daily, of the State, the Bureau, and of those in charge of it was something terrific to bear.

The burden was greatly increased by the considerable number of unreported births in the practice of two or three dozen physicians who in the past looked upon reporting births as a nuisance. There are now only about a half dozen of that type left on the black list for the State. The correspondence connected with securing these missing certificates adds greatly to the total burden.

During that period a number of the best trained clerks and stenographers were enticed away by higher salaries. This has not yet ceased. The force is now composed largely of untrained, inexperienced helpers who require two or three years' training before being able to act independently, and are as yet far from sufficient in number. A number of the old timers, who feel responsible for the work and take pride in doing it well, can be found at their desks long after the closing hours and on holidays. Many times they take work home and continue at it to ten or eleven o'clock in the evening.

The General Practitioner and the Early Diagnosis Campaign.

Fire is fire, no matter what the fuel, but when gasoline is thrown on a flame a dangerous explosion results. Tuberculosis is the same disease now as in peacetime, but war invariably favors a flareup of tuberculosis and creates new difficulties for those who must combat the blaze. The hard-pressed general practitioner is a seasoned firefighter, whose aid must be enlisted and whose effort must be supported if smouldering tuberculosis, lately coming under control, is to be prevented from spreading into a serious conflagration. Even veteran firemen, however, periodically examine their equipment and drill themselves to increase their efficiency.

This month, the Virginia Tuberculosis Association is participating in a nationwide campaign, the chief aim of which is to find tuberculosis in its early and most curable stages.

If tuberculosis is to be found preclinically or at onset of its earliest symptoms a thorough, practical and economical plan of attack is necessary. This calls for early diagnosis, hospitalization of active cases and discovery of the source of infection. Greatest hope for success lies in the interest and cooperation of the general practitioner. He sees the patient early and through his intelligent effort will come early diagnosis, prompt isolation and investigation of contacts.

Weapons at hand include history, physical examination, tuberculin test, sputum examination, x-ray and fluoroscopy, and sanatorium treatment.

Unfortunately, all too many early tuberculous cases fail to reach a sanatorium because of the absence of early diagnosis. In a study made for the National Tuberculosis Association by Jessamine S. Whitney and Mary V. Dempsey, in which the Virginia State sanatoria were included, we find that upon admission to the sanatoria 48 per cent of the cases were diagnosed as far advanced, while but 13 per cent were considered minimal. Although no definite statistical evidence is available on this point, it was obvious from the information available that almost all cases were discovered through symptoms severe enough to send the patient to the physician.

Doctor Paul Geary in the March Bulletin of the National Tuberculosis Association writes, "if we persist in describing tuberculosis in terms of symptoms, we might as well omit further discussion of early diagnosis, even though we admit knowledge of classical symptoms is essential if we are to have tuberculosis in mind when we encounter those less fortunate cases long past the stage when early discovery was possible."

The greatest contribution the general practitioner can make in the field of tuberculosis in wartime is

the intensification of his peacetime effort, keeping the disease constantly in mind and remembering that the ultimate ideal in controlling tuberculosis would be to have every adult x-rayed annually.

Note: A copy of "Chest X-ray Interpretation" by J. Burns Anderson, M.D., or "Diagnostic Standards and Classifications of Tuberculosis" prepared by the National Tuberculosis Association and The American Trudeau Society will be sent free upon request to any Virginia physician by the Virginia Tuberculosis Association, 504 Atlantic Life Building, Richmond, Va.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Funds have been set aside for the provision of a number of Rapid Treatment Centers in several States. The centers will provide medical care designed to cure early syphilis, gonorrhea, and other venereal diseases. In order to satisfy the demand for emergency control of venereal disease during the war, the medical directors at the centers will avail themselves of the most effective rapid treatment technics now practiced, including four or five weeks' post-treatment observation under medical supervision. In addition to medical treatment, the centers will provide some form of vocational guidance.

The basic responsibility of the Public Health Service is to provide consultation service to other agencies cooperating in the program and to furnish specially trained physicians, nurses and technical personnel to operate the centers.

More than thirty centers will be in operation by the end of 1943. It is estimated that 15,000 infected persons will be admitted to the centers and rendered non-infectious, their disease either arrested or cured, during the war.

A program aimed at the curbing of prostitution and venereal disease in the U. S. and its possessions through the efforts of the 2,000,000 members of the General Federation of Womens Clubs was started recently at the meeting of its board of directors in Chicago, Illinois. The program was presented to the directors, who represented 16,500 clubs, in a report by the Federation's department of public welfare.

The Retail Druggists Association of San Antonio, Texas, recently adopted strong resolutions critical of the sale of so-called patent medicines in the treatment of venereal disease and pledging support to the medical profession in the effort to suppress these diseases by scientific treatment and management.

The promiscuous girl and the casual "pick-up" have become a greater problem for law enforcement officers and health authorities than the organized commercial type prostitute, according to police experts who attended the recent meeting in New York City, New York, of the National Advisory Police Committee on Social Protection. At the same time, a representative of the American Bar Association told the group that local branches of his organization are ready to cooperate with police officials, health officers, and judges in strengthening existing legislation regarding repression of prostitution and quarantine of prostitutes.

Lay workers are proving successful at contact tracing and follow-up work in a southern State, according to reports received in Washington. They were largely responsible for finding and bringing to treatment 494 individuals previously unknown to be infected with venereal disease who had been reported to local health officers for investigation during one month. The persons found and brought to treatment were contacts reported by infected service men, contacts reported by infected civilians, and selectees whose physical examinations had shown evidence of venereal disease.

Evidence of syphilis was detected in 45.3 out of every 1,000 men in the first two million to be examined as selectees or volunteers for service in the armed forces. This was revealed in a tabulation and

analysis of 1,895,778 reports of serologic tests for syphilis on men between the ages of 21 and 35 who reported for examination under the Selective Training and Service Act of 1940. The rate of prevalence for the entire male population of the United States between the ages of 21 and 35 is estimated to be 47.7 per 1,000. Among Negro selectees, the rate is 253.1 per 1,000; among white selectees, 17.5 per 1,000. The estimated rate of prevalance for the entire male Negro population aged 21 to 35 is 272 per 1,000; the entire male white population, 23.5 per 1,000.

One of the most critical of all the problems faced by wartime America is that of securing adequate manpower for our war industries. Handicapped persons, people normally considered as being too young or too old to work in factories, women by the millions who have never before worked outside their homes—all of these manpower resources will be drawn upon. And yet every day we read predictions that a serious shortage of workers is impending.

There cannot be maximum utilization of our manpower so long as large numbers of workers are excluded from industrial employment because they have non-infectious syphilis. Furthermore, this mistaken policy works serious damage to our national control program since it causes people to conceal infection in the fear that it will keep them from obtaining or holding jobs.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient, a twenty-six year old, colored multigravida, two months pregnant, was seen on two separate days by her family physician, because of nausea and vomiting. She was sent to the hospital and admitted for an operative procedure. On the day following admission, dilatation and curettage were done, and the uterus packed, at which time her temperature was 98.4, pulse 84, respiration 20. On the first postoperative day the temperature was 101, pulse 100, respiration 22. The pack was removed thirty-seven hours after operation. There was a complaint of lower abdominal pain at intervals immediately following the operation, and severe abdominal pain accompanied by vomiting was present on the third postoperative day. A chill occurred eight hours before the pack was removed. The temperature remained elevated and varied between 99 and 102, and the pulse increased gradually to 148. She was given intravenous fluids, morphine and quinine, but the abdominal pain continued and vomiting occurred at intervals. On the fifth postoperative day, after the intravenous administration of 500 cc. of 5 per cent dextrose solution, the patient's condition became much worse. The pulse became weak and the skin cold and clammy. There was partial recovery from the attack but that same evening the patient died three hours after a transfusion.

COMMENT

This has been classified as a preventable death by the Committee. Although the history is incomplete it seems as if very little effort was made to treat this patient before she entered the hospital. Treatment in the home of severe cases of vomiting of pregnancy is practically impossible. This patient was admitted to the hospital for the interruption of the pregnancy and not for the treatment of the vomiting. It is rarely necessary to interrupt a pregnancy for vomiting. Certainly a normal temperature, pulse and respiration would not indicate a seriously ill patient. Hospital treatment with isolation, sedation, glucose intravenously, and vitamin therapy will cure practically all of these patients. Surgical intervention should be postponed until medical treatment has had a fair trial. In extreme cases, however, interruption of the pregnancy may be necessary and at times is a life saving procedure.

It is the opinion of the committee that this patient died of sepsis, probably having had a perforated uterus at the time of the operation.

MENTAL HYGIENE NOTES

Virginia Conference of Social Work. Roanoke, Virginia, April 21-24, 1943.

The program to be presented by THE MENTAL HYGIENE SOCIETY OF VIRGINIA, Friday, April 23, in Roanoke is as follows:

MORNING SESSION:

THEME: Mental Hygiene—Present and Post-War Planning.

Morning Session: 9:30 A. M. to 12 noon.

1. The Problem of the Military Rejects and Casualties.
   Dr. Samuel W. Hamilton, Mental Hospital Advisor, Division of Mental Hygiene, U. S. Public Health Service, Washington, D. C.
   Discussant: Dr. O. B. Darden, Associate Professor of Neuropsychiatry, Medical College of Virginia, Richmond.
2. The Problem of the Civilian Maladjusted.
   Dr. David C. Wilson, Professor of Neuropsychiatry, University of Virginia School of Medicine, University, Virginia.
   Discussant: Dr. Richard S. Lyman, Professor of Neuropsychiatry, Duke University Hospital, Durham, N. C.

Afternoon Session: 2 to 4:30 P. M.

1. The Value of Field Clinics in Meeting Our War and Post-War Mental Hygiene Problems.
   Dr. Joseph E. Barrett, Supervisor of Clinics, Commonwealth of Virginia, and Clinical Director, Southwestern State Hospital, Marion, Virginia.
   Discussant: Mrs. Marjorie Wyatt, Superintendent Girls Industrial School, Bon Air, Virginia.
2. The Social Workers' Part and the Community's Obligation in the Promotion of Field Clinics.
   Mrs. Donna Banting Bemiss, Chief Psychiatric Social Worker, Children's Memorial Clinic, Richmond, and
   Miss Wilhemina Baughman, Intake Supervisor, Children's Bureau, Richmond.
   Discussant: Mrs. Jean Smith Hunter, Field Representative, Department of Public Welfare, Abingdon.

NIGHT SESSION: 8 P. M. (Public).

THEME: ALCOHOLISM: A Social, Psychiatric, and State Problem.

1. The Role of the Commonwealth.
   The Honorable Hunter Miller, member of the State Alcoholic Beverage Control Board.
2. The Role of Psychiatry.
   Dr. Robert V. Seliger, Instructor of Psychiatry, Johns Hopkins University, Medical School, Baltimore.

The Program Committee for this session is composed of:

Dr. O. B. Darden.
Dr. R. Finley Gayle, Jr.
Dr. David C. Wilson.
Dr. Hugh C. Henry.
Mr. William Shands Meacham.
Mrs. Donna Banting Bemiss.
Mr. Elwood Street.
Dr. Howard R. Masters, *Chairman.*

MILITARY MEDICINE

Virginia Doctors in Service Supplement 4

This is the Fourth Supplement to the list of Virginia Doctors in Service, the original list appearing in the July, 1942, MONTHLY, with supplements in September and October and January, 1943. Names are given alphabetically, with home addresses, in view of constant changes in location and rank. Readers will render a service by sending names of any omissions that they may be published at a later date.

MEMBERS OF MEDICAL SOCIETY OF VIRGINIA

Dr. Henry R. Bourne, Danville.
Dr. W. A. Brown, Jr., Portsmouth.
Dr. Kenneth Cooper, Lynchburg.
Dr. Jesse Bruce Hopkins, Bridgewater.
Dr. Edmund Horgan, Warrenton.
Dr. Joseph L. Hundley, Charlottesville.
Dr. G. Richardson Joyner, Suffolk.
Dr. J. H. Judson, Arlington.

Dr. R. G. McAllister, Richmond.
Dr. H. C. McCoy, Gordonsville.
Dr. S. H. Mirmelstein, Newport News.
Dr. John S. Pearson, Jewell Ridge.
Dr. Benj. F. Phillips, Quantico.
Dr. Carl I. Pirkle, Prince George.
Dr. E. B. Robertson, Danville.
Dr. B. Carter Rowe, Fredericksburg.
Dr. J. Ward Sinclair, Warrenton.
Dr. George H. Smith, Winchester.
Dr. James W. Tankard, Hilton Village.
Dr. Wm. R. Tyson, Norfolk.
Dr. G. D. Vermilya, Richlands.
Dr. M. J. W. White, Luray.
Dr. L. K. Woodward, Front Royal.
Dr. Frank B. Wolfe, Coeburn.
Dr. Frank A. Zack, Newport News.

NON-MEMBERS

Dr. Herbert C. Allen, Jr., Richmond.
Dr. A. W. Bradford, Derby.
Dr. Warren A. Colton, Kecoughtan.
Dr. Pete Cummings, Charlottesville.
Dr. Maynard R. Emlaw, Charlottesville.
Dr. Alfred R. Garnett, Norfolk.
Dr. Alfred Ogus, Norton.
Dr. James B. S. Perrow, Lynchburg.
Dr. Jack G. Webb, Richmond.

Public Health

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for February, 1943, compared with the same month in 1942, and for the period of January through February, 1943, compared with the same period in 1942, follows:

	Feb. 1943	Feb. 1942	Jan.-Feb. 1943	Jan.-Feb. 1942
Typhoid and Paratyphoid	13	7	28	38
Diarrhea and Dysentery	84	105	179	224
Measles	1,188	535	1,605	1,379
Scarlet Fever	152	155	411	350
Diphtheria	37	45	93	116
Poliomyelitis	4	0	8	0
Meningitis	154	14	249	31
Undulant Fever	3	0	6	2
Rocky Mountain Spotted Fever	0	1	0	1
Tularemia	4	2	20	14

BLACK MARKET MEAT HAZARDS

The practice of medicine is becoming increasingly difficult under stress of war conditions. Hitherto little consideration has been given to the physician's role regarding evasions of such public health regulations as those which provide for sanitary inspection of meats for human consumption. In recent decades federal meat inspection has played a large and increasingly effective part in the prevention of parasitic infestations, bacterial infections and the toxic conditions loosely termed food poisonings.

Emergency slaughtering of food animals under black market conditions to evade food rationing requirements inevitably must result in a marked increase of sporadic and epidemic incidence of meat borne disease. Fortunately the mortality of those diseases usually is not very high except in the relatively infrequent occurrence of such diseases as botulism. However, the typical severe and alarming onset of the food poisonings in general places illnesses of this character in the emergency class of calls for medical service. Even a single case of this nature is burdensome to the physician already overworked under war conditions. Outbreaks of tens or hundreds of cases, with simultaneous onset, present problems out of proportion to the actual number and severity of the cases.

Physicians as recognized guardians of the public health have special opportunities to advise the laity regarding the very real dangers of illicit meat supplies. Their statements on such matters are properly regarded as authoritative and, because they are spread far and wide by word of mouth, they may prove to be the most effective means of influencing public opinion on the advantages of avoiding the use of illicit and dangerous meat products in rationing times.

With only neglible exceptions, the safeguards of competent meat inspection service apply to all meats and meat products of the larger packers and even of those smaller ones who engage legally in interstate business. But, because diseased stock is unsaleable through the better plants, there is a constant flow of inferior stock and diseased animals to slaughter by individual owners or in inconspicuous establishments which are common sources of black market meat. Only in such ways is a market to be found for meat from animals in the terminal stages of hog cholera or generalized septic diseases, or from animals with heavy parasitic infestations. They will be sold if purchasers can be found. The medical profession may render another public service of inestimable value by bringing this matter to the attention of their patients and friends.

New Members

New members of the Medical Society of Virginia, since the list published in the March 1942 issue of the MONTHLY, are:

Dr. H. Charles Ballou, Franklin.
Dr. Roy Alexander Barlow, Winchester.
Dr. Julian Ruffin Beckwith, Clifton Forge.
Dr. Richard Alfred Bennett, Lynchburg.
Dr. Maxwell R. Berry, Jr., Richmond.
Dr. Emmett Perleyman Bray, Richmond.
Dr. Edward Vernon Brush, Jr., Lexington.
Dr. Lester James Buis, Richmond.
Dr. Lintner Earl Clark, Roanoke.
Dr. William Ralph Counts, Bishop.
Dr. W. O'Connor Cox, St. Paul.
Dr. Henry Charles Davis, Bluefield.
Dr. John Huit Dellinger, Pennington Gap.
Dr. Shockley DeWitt Gardner, Richmond.
Dr. William Minor Deyerle, Richmond.
Dr. Siegfried Dratler, Portsmouth.
Dr. Thomas Latane Driscoll, Columbia.
Dr. Clarence Clayton Fabric, Radford.
Dr. Douglass Durston Fear, Roanoke.
Dr. Maurice Milton Fliess, Clifton Forge.
Dr. Glen Gilbert Foster, Stonega.
Dr. Leonard Meredith Galbraith, Norfolk.
Dr. Frederick Gochnauer, Upperville.
Dr. George Everard Godman, Chilhowie.
Dr. Asa Wesley Graves V, Lacey Spring.
Dr. Jacques Pierce Gray, Richmond.
Dr. Harry Lee Greenberg, Covington.
Dr. James Hill Gressette, Roanoke.
Dr. William Sampson Hadley, Norfolk.
Dr. William A. Harris, Spotsylvania.
Dr. Richard Franklin Hawkins, Radford.
Dr. Alvah Livingston Herring, Jr., Richmond.
Dr. Kurt Hirsch, Franklin.
Dr. Paul Regan Howard, Norton.
Dr. Octavius Lake Huffman, Arvonia.
Dr. Levi Woodbry Hulley, Jr., Palmyra.
Dr. Jacob Gerry Jantz, Bedford.
Dr. Hal Standish Johnson, Patterson.
Dr. George Richardson Joyner, Suffolk.
Dr. Ludwig Helmut Korn, Norfolk.
Dr. Joseph Krimsky, Charlottesville.
Dr. Joseph Riddick Leigh, Norfolk.
Dr. Leon Linder, Clifton Forge.
Dr. Ulus Walter Massie, Roanoke.
Dr. Alexander Taylor Mayo, Portsmouth.
Dr. Russell Greenway McAllister, Richmond.
Dr. Donald Carruth McCollum, Arlington.
Dr. Robert William McCullough, Charlottesville.
Dr. Richard Anderson Michaux, Richmond.
Dr. Milton Millman, Derby.
Dr. Claude Linwood Neale, Richmond.
Dr. William Earl Overcash, Roanoke.
Dr. Richard Spurgeon Owens, Jr., Roanoke.
Dr. Maysville Owens Page, Richmond.
Dr. George Benedict Pantera, Richlands.
Dr. Philip Brower Parsons, Norfolk.
Dr. Seymour George Pelzer, Calvin.
Dr. Jack Berry Porterfield, Richmond.
Dr. Claudio Rodriguez, Norfolk.
Dr. Lonsdale Joseph Roper, Richmond.
Dr. George Sterling Row, Richmond.
Dr. John Oscar Rydeen, Norfolk.
Dr. Joseh Schechner, Norfolk.
Dr. Walter Stafan Schiff, Marion.
Dr. Ernest Escarza Serrano, Norfolk.
Dr. Ernest L. Shore, Harrisonburg.
Dr. Leroy Smith, Richmond.
Dr. Maynard Putney Smith, Richmond.
Dr. George James Stuart, Arlington.
Dr. James Marion Suter, Ft. Eustis.
Dr. Myrtle Marie Thomas, Roanoke.
Dr. Frank Blaine Truesdell, Richmond.
Dr. Camilla Ruth Tuthill, Charlottesville.
Dr. Marion Lawrence White, Jr., Charlottesville.
Dr. William Massie Whitehead, Lovingston.
Dr. Frank Dixon Whitworth, Front Royal.
Dr. Francis Droit Willey, Dunbar.
Dr. Robert Manton Wilson, Richmond.
Dr. Frank Bays Wolfe, Coeburn.
Dr. Arnold Milton Zetlin, Norfolk

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

National Auxiliary Meeting.

Because of the existing war conditions it was deemed advisable by the American Medical Association to cancel the 1943 annual session and hold only a meeting of the House of Delegates in Chicago. The Woman's Auxiliary, by action of the Board of Directors in Atlantic City on June 11, 1942, and in Chicago on November 20, 1942, will likewise confine their 1943 session to a meeting of the Executive Board and the House of Delegates in Chicago, June 7 to 9, to effect a change in officers.

The Drake Hotel has been selected as headquarters for this meeting and the following rates will prevail:

Single room with bath ..... $3.50 per day and up
Double room with bath ..... $6.00 per day and up
Suite (living room, bedroom and bath) ..... $12.00 per day and up

It is suggested that those planning to attend the meeting arrange for railroad and hotel accommodations (with the Drake Hotel direct) as soon as possible.

While the action of the Board of Directors calls for a meeting of only the Executive Board and the House of Delegates, any members of the Auxiliary who should happen to be in Chicago at the time of the meeting will be most welcome to attend the general sessions.

The Mid-Tidewater Medical Auxiliary

Met January 26th in the home of Mrs. W. S. Cox of West Point, with a small but interested group in attendance. Mrs. Hawes Campbell, who has served as president for a number of years was re-elected and presided at this meeting.

Mrs. James W. Smith, Public Relations Chairman, assisted by Mrs. Paul Pearson, led a quiz on the following subjects: "Be Informed on A. M. A." and "About Public Relations".

Dr. F. S. Johns, Richmond, addressed the group on "Medical Education and the Health of the People".

Mrs. Campbell read a memorial to Mrs. Griffin W. Holland, our beloved former State President. We shall miss this lovely character and feel fortunate to have had her in our lives. She was the essence of love, beauty and refinement.

A delicious lunch was enjoyed with our doctors at the York Inn. The next meeting will be in April.

VIRGINIA PEARSON (MRS. PAUL)
Publicity Chairman.

Petersburg Auxiliary.

The annual hospital linen shower was given on February 23rd. In spite of the difficulty in securing linens and of advance in prices, the following donations were made: 116 sheets, 17 spreads, 73 bath towels, 59 face towels, 61 pillow slips, 39 wash cloths, and 1 quilted pad. In addition, $39.50 was given in cash with which necessary linens will be bought. This does not include all donations as some colored churches preferred to wait until next month.

Several changes have been made in the personnel of the officers of this Auxiliary, due to the fact that some ladies have left the city with their husbands who are in the armed forces. Officers now are: President, Mrs. H. M. Snead; president-elect, Mrs. J. E. Hamner; vice-president, Mrs. C. S. Dodd; treasurer, Mrs. Meade Edmunds; recording secretary, Mrs. W. B. McIlwaine; and corresponding secretary, Mrs. C. T. Jones.

Alexandria Auxiliary.

Mrs. Nathan Schuman, president, presided at the February meeting of this Auxiliary, held at the home of Mrs. H. A. Latane. Mrs. W. Clyde West, delegate, gave a report on the Board meeting of the State Auxiliary in Richmond in January, after which there was discussion of proposed revisions in the by-laws. These were adopted.

As there are many doctors in the Service who are locating in Alexandria, the Auxiliary went on record to extend an invitation to these doctors' wives to become members.

At the close of the business session, the members dispensed with their usual program and began their Red Cross sewing project. They are making blankets for layettes.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us the same.

Essentials of Proctology. By HARRY E. BACON, M.D., F.A.C.S., F.A.P.S., Professor and Head of the Department of Proctology, Temple University Medical School and Hospital; Head of Department of Proctology, St. Mary's Hospital; etc. Introduction by Curtice Rosser, B.A., M.D., F.A.C.S., F.A.P.S., Professor of Proctology, Baylor University, Dallas, Texas. Philadelphia, J. B. Lippincott Company. 1943. xvi-345 pages. 168 illustrations. Cloth. Price $3.50.

Chemotherapy of Gonococcic Infections. By RUSSELL D. HERROLD, B.S., M.D., Associate Professor of Surgery (Urology) College of Medicine, University of Illinois, Chicago. St. Louis, The C. V. Mosby Company. 1943. 137 pages. Cloth. Price $3.00.

The Principles and Practice of War Surgery. With Reference to the Biological Method of the Treatment of War Wounds and Fractures. By J. TRUETA, M.D., Formerly Director of Surgery, General Hospital of Catalonia, University of Barcelona; Assistant Surgeon (E.M.S.) Wingfield Morris Orthopaedic Hospital, Oxford; Acting Surgeon-in-Charge

Accident Service, Radcliffe Infirmary, Oxford. With Introduction by Owen H. Wangensteen, M.D., Minneapolis, Minn. St. Louis, The C. V. Mosby Company. 1943. 441 pages. Illustrated. Cloth. Price $7.50.

How to Learn and Advance. By SAMUEL KAHN, M.D., Ph.D., Formerly on the Faculties of Georgetown and New York Universities; Chief Psychiatrist, U. S. Induction Boards for the States of New Jersey and Delaware; etc. xviii-196 pages. Cloth. Price $2.00.

This small book is dedicated to an important and pressing need: How to Study—a factor to which more time should be devoted by colleges and even medical schools. Good students usually learn this by themselves; poor and mediocre ones may never attain the art unaided. The author discusses the way in which to make use of a library and reference books, the importance of taking lecture notes and of regular time of study in a quiet room, memorizing methods, and suggestions on how to concentrate.

The idea of this book is excellent; unfortunately it is annoyingly repetitious in many places, and dry in others; it needs working over. It is regrettable that where the author states (p. 104) "In his 'Health Precepts', Salerno maintains: . . ." he did not give us some bibliographic data concerning this "Mr. Salerno". R. J. M.

The Sight Saver. By C. J. GERLING. Harvest House, New York. 1943. 202 pages. Cloth. Price $2.00.

According to the author this book is intended "merely to acquaint one with what may be done for ailing eyes and is not in any sense to be considered as information for self-treatment of the eyes". He further states that he has included sufficient description and explanation of the structure and function of the eye to supply "general information for the average person . . . without going into technical complexity".

The volume is composed mostly of definitions or explanations of a variety of items with reference to the eyes. The usual arrangement of subject matter into chapters has not been followed. The writer explains, in his introduction, that he has cut up the subject matter into small unit items . . . and has arranged them alphabetically.

The book contains 202 pages of these definitions and explanations, ranging in length from a line or two to two pages, and embraces a "diversity of discussion" as noted in the foreword by Commander Pugh, USNR. Many items which hold interest for the layman are included, such as Beautifying the Eyes, Quackery and Fraud, Sunglasses, Mail-Order Glasses, etc. P. W.

Food Charts: Foods As Sources of the Dietary Essentials. Prepared by a joint Committee of the Council on Foods and Nutrition of the American Medical Association and of the Food and Nutrition Board of the National Research Council. Paper. Price 10 cents. (Quantity prices on request.) Pp. 20. American Medical Association, Chicago, 1942.

Current interest in nutrition is at a high level and the subject merits all the attention which it is receiving. Information about the composition of foods now is on a quantitative basis. A forceful presentation of some facts about foods as sources of the dietary essentials is provided by the present illustrated essay, which has been prepared by a joint committee of the Council on Foods and Nutrition of the American Medical Association and of the Food and Nutrition Board of the National Research Council. There are eight charts showing the contribution, that individual foods may make with respect to the needs for protein, calcium, iron, vitamin A, thiamine, riboflavin, nicotinic acid, and ascorbic acid. A feature of these graphic presentations is that the values are presented in terms of the proportion of the daily requirements which are supplied by typical servings of each food. The requirements selected are the Recommended Daily Allowances of the Food and Nutrition Board of the National Research Council. The charts show, for example, that a serving of about 3½ ounces of cooked greens (beet, kale, chard, mustard, spinach, turnip) will supply more than 10,000 International units of provitamin A, the daily allowance of which is 5,000 International units. An orange of average size, or half a grapefruit, or a serving of fresh strawberries will supply the 75 milligrams of ascorbic acid which is considered to be a desirable intake of vitamin C. It is interesting to note the unique value of milk as a source of calcium, protein and riboflavin. There is a descriptive paragraph or two about each of the charts. In addition the booklet reproduces the table of Recommended Dietary Allowances and also provides the values of Minimum Dietary Requirements developed by the Food and Drug Administration for purposes of labeling special dietary foods. This little essay thus provides considerable factual information about foods as sources of the dietary essentials.

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Editor

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Business Manager

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

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Editorial

Rheumatic Fever

THERE is a growing conviction that in some manner rheumatic fever should be made a reportable disease. In Virginia where the disease has been considered to be relatively rare, we now learn through mortality statistics that the death rate from rheumatic fever and rheumatic heart disease is average for the country as a whole and is six times as high as that from infantile paralysis, generally regarded as one of childhood's greatest menaces. The only diseases outranking it as a cause of death among children between the ages of five and fourteen are pneumonia and tuberculosis.

Of course, the frequent difficulty encountered in making an accurate diagnosis of rheumatic fever is one reason for the failure to make it a reportable disease. This seems especially unfortunate now since conditions favoring its spread are existing in many of our wartime boom towns throughout the country. These conditions include damp, overcrowded quarters, malnutrition, fatigue, lack of sunshine and recreation, and lack of medical care.

Success in controlling rheumatic fever depends upon early discovery and adequate medical care. Many children have repeated attacks until they reach adolescence and occasionally afterward. The incidence of heart damage which is high even in the initial attack, increases with each recurrence of the disease. The duration of an attack may be for months or even one or two years. Therefore, it is obvious that the expense of this care frequently is beyond the means of the family's budget even when adequate facilities are available for it.

In order to insure that the patient will be brought to the physician's attention promptly, an educational program for the general public is advisable. The American Academy of Pediatrics, The American Heart Association, The Children's Bureau, Department of Labor, and some of the large insurance companies now are conducting a nation wide educational campaign to reduce mortality from this disease.

A demonstration being carried on by the State Health Department for the past two years reveals the presence of the disease to a considerable degree. During this two-year period approximately 150 children in Richmond and the adjoining counties have been diagnosed as having rheumatic fever and are being cared for in their own homes or in hospitals and convalescent homes set up in the Richmond area.

A diagnostic clinic provided with the most modern scientific equipment and manned by specially qualified clinicians is one of the most important services in the program. Such a clinic is operated by the State Department of Health in cooperation with the Out-Patient Department, Medical College of Virginia.

From this relatively modest beginning, it is expected that adequate care for these children eventually will become available throughout the State, as the private physician on a constant alert for such cases, indicates the need in his local community.

I. C. RIGGIN, M.D.
Virginia State Health Commissioner.

One-Man Medical Schools

LESS than 150 years ago, 1797 to be exact, Dartmouth started what Harvey Cushing[1] aptly called a one-man medical school. The school was organized by Nathan Smith, who was its entire faculty. Not only did he do all the teaching, but he made his living by practicing medicine and surgery twenty miles away in Cornish, New Hampshire. At a somewhat later date Dr. Peter Mettauer ran a medical school here in Virginia with the aid of his two sons. Nor were such institutions confined to the backwoods of America. Abraham Flexner[2] is our authority for the statement that Johannes Müller (1801-1858) was the entire German medical faculty at the University of Berlin.

When compared to modern medical schools, such institutions are the best possible evidence of the tremendous advances that medicine has made in the past one hundred years. They also mark the transition between the apprentice system of instruction that pertained previous to that time and the more systematic instruction of the medical college. In Colonial times most of the practitioners were trained by the apprentice system. A few studied medicine in Europe. The earliest American medical schools started as schools of anatomy. When William Shippen, Jr., for instance, returned to Philadelphia in 1762, after studying medicine in London and Edinburgh, he started a course of anatomical lectures. Three years later he and Dr. John Morgan started the medical school of the College of Philadelphia. In 1763 Dr. Samuel Clossy gave a course of lectures on anatomy at King's College, and in 1768 a medical school was organized in connection with the college which was the forerunner of the College of Physicians and Surgeons of Columbia. In 1780 Dr. John Warren demonstrated anatomy in a series of dissections before his colleagues in Boston, and three years later when the Harvard Medical School was started, he became the Professor of Anatomy. William and Mary had its school of anatomy but got no further towards a regular medical school.

The fourth medical school to be established was Dartmouth. Even after the establishment of medical schools the student's clinical instruction was supplied by the apprentice system. He "read" medicine with some well established practitioner before, and even after, he entered the medical school. At the school the instruction, with the exception of dissections, was entirely didactic. As the sciences, chemistry, physiology, pathology, and bacteriology developed, laboratories were added, and finally within our own memory, the teaching hospital became the very center of the medical school.

With the university-type of medical instruction, the apprentice system dropped out

of the picture, so far as undergraduate-medical teaching was concerned. It still played an important role in post-graduate instruction. Again in this field, it has been followed by what is in effect one-man medical schools. For instance, Dr. Joseph L. Miller runs what might be termed a one-man school in general practice and industrial medicine. He takes on an assistant for three years. At the end of that time, the assistant has to leave to make room for another. We asked Dr. Miller why the inflexible three-year rule. His reply was: "If the assistant is any good, it is not fair to him to keep him, and if he is no good, three years are long enough." Dr. Sproat Heaney[3] described his system for post-graduate training in gynecology in his presidential address before the American Gynecological Society. When his assistant has been with him three years, Dr. Heaney sends him on a travel course at the end of which he endeavors to establish the student wherever he wishes to locate. No doubt, there are many of these one-man post-graduate schools throughout the country, but here, too, they are being supplanted by more formal academic instruction in the form of residencies in the various medical centers. Thus we go round and round in search of the most important thing in medical education—clinical experience.

REFERENCES

1. The Medical Career. Little, Brown & Co. 1940.
2. I Remember; Autobiography of Abraham Flexner, New York, Simon & Schuster, 1940.
3. Transactions of the American Gynecological Society, 63:1, 1938.

Societies

Virginia Board of Medical Examiners.

At the meeting of the Board on December 8-11, 1942, the following were granted certificates:

Dr. Janet Alexander, Staunton.
Dr. Theodore Edwin Alm, Richmond.
Dr. Lewis Franklin Boddie, Roanoke.
Dr. Roy Alexander Barlow, Winchester.
Dr. James Henry Carpenter, Waynesboro.
Dr. Thomas S. Chalkley, Richmond.
Dr. Emerson Day, Washington, D. C.
Dr. Lyle E. Delap, Radford.
Dr. Samuel Stanley Dorrance, Washington, D. C.
Dr. Bruce Eccles Douglass, Richmond.
Dr. Charles Leo Dugan, Newport News.
Dr. Claude McClintic Dunlap, South Charleston, W. Va.
Dr. Boyce Elliott, Welch, W. Va.
Dr. Ronald B. Fankboner, Dahlgren.
Dr. James A. Gannon, Washington, D. C.
Dr. Istvan A. Gaspar, Norfolk.
Dr. Jacques Pierce Gray, Richmond.
Dr. Robert Milton Greenberg, Arlington.
Dr. Milus Liddell Gunn, Harlan, Ky.
Dr. Emmett Dysart Hightower, Dahlgren.
Dr. Robert Carhart Hood, Arlington.
Dr. Isadore Kamin, Weston, W. Va.
Dr. Arthur Jerome Koven, Blacksburg.
Dr. Benedict Kudish, Hampton.
Dr. Rachelle L. Kurman, Newport News.
Dr. Evelyn Taylor Livermore, Alexandria.
Dr. Leonidas Franklin Livisay, New York, N. Y.
Dr. Robert Ira Lowenberg, Portsmouth.
Dr. Thistle M. McKee, Alexandria.
Dr. James Keith Morrow, Radford.
Dr. Ellen Mary Nicholson, Waynesboro.
Dr. Marion Z. Ploski, Emory.
Dr. Julian T. Potts, Newport News.
Dr. Grace Purse, Washington, D. C.
Dr. Catherine W. Richard Smith, Suffolk.
Dr. Norman Strauss, New York, N Y.
Dr. John Thruston Thornton, Charlottesville.
Dr. Ralph W. Weilerstein, Falls Church.
Dr. LeMoyne White, Washington, D. C.
Dr. Ruth Mitchell White, Washington, D. C.
Dr. Eugene Lorenzo Willard, Arlington.
Dr. Robert Manton Wilson, Richmond.

Wise County Medical Society.

At the meeting of this Society on February the 12th, officers for the current year were elected as follows: President, Dr. J. J. Porter, Norton; vice-presidents, Dr. R. W. Holley, Appalachia, Dr. Jos. Culbertson, Coeburn, and Dr. S. G. Pelzer, Calvin; and secretary-treasurer, Dr. W. B. Barton, Stonega. The Board of Censors is composed of Drs. F. S. Givens of Wise, D. C. Keister of Osaka, and C. L. Harshbarger of Norton.

After the business session, the DeLee film on "Post-partum Hemorrhage" was shown and much enjoyed.

Roanoke Academy of Medicine.

At a dinner meeting of the Academy, held on March 1st, the following scientific program was presented: Hepatitis by Capt. Frank L. Bauer, M.C., and The Immediate Care of Wounds by Lt. Col. D. C. Elkin, M.C. Both speakers are from the Ashford General Hospital at White Sulphur Springs, W. Va.

At the February meeting, Dr. W. F. Hatcher spoke on Artificial Fever Therapy in Ocular Inflammation; Dr. Jerome Natt on Some Menstrual Disturbances; and Dr. Roy M. Hoover on Treatment of Trochanteric Fractures of the Femur.

Dr. Paul Davis is president of the Academy and Dr. Ruth Barnhart, secretary.

Norfolk County Medical Society.

Dr. Samuel A. Cosgrove, obstetrician-in-chief of Margaret Hague Maternity Hospital in Jersey City, was guest speaker before this Society at its regular meeting on March 15th. His subject was "Analgesia and Anesthesia in Obstetrics".

News

Medical School Graduates.

Due to war conditions, the graduating exercises of both Virginia medical schools were "stream-lined" and practically all entertainment dispensed with.

MEDICAL COLLEGE OF VIRGINIA

Governor Colgate Darden was speaker at commencement exercises of the college, held at the Mosque Theatre, after which diplomas were awarded and hospital appointments announced. Following this, the annual reception and dance for the class of '43 were held at the Jefferson Hotel.

Graduates in medicine, with their hospital appointments are:

MEDICAL COLLEGE OF VIRGINIA HOSPITAL, RICHMOND—Drs. James Logan Chitwood, Sylvatus; Custis Lansing Coleman, Lexington; John James Dobbie, Fairmont, W. Va.; George Robert Gish, Jr., Bluefield, W. Va.; George Lester Grubb, Charleston, W. Va.; William Joseph Hagood, Jr., Corbin, Ky.; Abran Ernest Handy, Jr., Stuart; Fontaine Graham Jarman, Jr., Roanoke Rapids, N. C.; William Thomas Lawson, Fairmont, W. Va.; Dorothy Diehl Moore, Richmond; John Sargent Morris, Jr., Lynchburg; Thomas Lee Mosby, New River, Tenn.; James Avon Smith, South Charleston, W. Va.; Arthur Hastings Taylor, Jr., Richmond; Robert Manton Wilson, Jr., Richmond; William Hugh Womble, Jr,. Greensboro, N. C.; and Charles Gravely Young, Roanoke.

JOHNSTON-WILLIS HOSPITAL, RICHMOND — Drs. Charles William Byrd, Louisa; Melvin Bernard Lamberth, Jr., Woods Cross Roads; Percy Everett Schools, Jr., Richmond; and Garnett Roy Tureman, Jr., Pendleton.

ST. ELIZABETH'S HOSPITAL, RICHMOND—Drs. William Joseph Frohbose, Bound Brook, N. Jer.; and Francis Brown Lee, Monroe, N. C.

STUART CIRCLE HOSPITAL, RICHMOND—Dr. Fleming Wood Gill, Richmond.

GRACE HOSPITAL, RICHMOND—Dr. Charles Lester Salmon, Jr., Beach.

UNIVERSITY OF VIRGINIA HOSPITAL, CHARLOTTESVILLE—Dr. Herbert Rowland Pearsall, Roanoke.

NORFOLK GENERAL HOSPITAL, NORFOLK — Drs. Charles Porter Blunt, III, Lynchburg; William Samuel Grizzard, Drewryville; and John David Powell, Stuart.

NORFOLK NAVAL HOSPITAL, PORTSMOUTH—Drs. John Scott Shaffer, Wytheville; and Russell Nelson Snead, Midlothian.

JOHNS HOPKINS HOSPITAL, BALTIMORE—Drs. Horace Allen Albertson, Richmond.

MERCER HOSPITAL, TRENTON, N. J.—Dr. Robert Carl Aliff, Whitesville, W. Va.

BAYAMON CHARITY DISTRICT HOSPITAL, BAYAMON, P. R.—Drs. Eduardo Arandes Rexach, San Juan, P. R.; and Juan Jesus Santos y Tejedor, Yabucoa, P. R.

ROBERT PACKER HOSPITAL, SAYRE, PA.—Dr. Hugh Sharp Brown, Rochester, Minn.

ST. VINCENT'S HOSPITAL, ERIE, PA. — Dr. John Lewis Brown, Ford City, Pa.

PRESBYTERIAL HOSPITAL, PHILADELPHIA, PA.—Dr. William Stelle Johnson, Montclair, N. J.

WILKES-BARRE GENERAL HOSPITAL, WILKES-BARRE, PA.—Dr. Lucile Welsh Richardson, Salem.

ST. LOUIS CITY HOSPITAL, ST. LOUIS, MO.—Dr. Robert Edward Carr, Clinton, N. C.

CHESAPEAKE & OHIO HOSPITAL, HUNTINGTON, W. VA.—Dr. Warren Smoot Carter, Huntington, W. Va.

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UNIVERSITY OF VIRGINIA

Simple ceremonies for all the graduating classes of the University were held in Cabell Hall, on the afternoon of March 15. There was no address but a short farewell talk by President John L. Newcomb. After these exercises, the graduates and their immediate families were guests at a buffet supper in Alumni Hall.

Graduates from the Medical School, with hospital appointments, are listed herewith:

UNIVERSITY OF VIRGINIA HOSPITAL, UNIVERSITY—Drs. Walter Protho Barnes, Jr., Stuart; Oliver B. Bobbitt, Jr., Charleston, W. Va.; Armistead Page Booker, New Castle, Del.; Joshua Fry Camblos, Big Stone Gap; Donald Paul Chance, Hagan; William Cassius Cook, Jr., Princeton, W. Va.; Lewis Franklin Cosby, Jr., Abingdon; Thomas Stillwell Edwards, New York, N. Y.; William Fletcher Harrell, Jr., Portsmouth; Carl William Irwin, Harrisonburg; Randolph Leigh, Jr., McLean; Myrtle Evelyn Logan, Meadowview; Raney Archer Oven, Tallahassee, Fla.; James C. Price, Norfolk; George Nicholas Psimas, Portsmouth; Charles Frederick Schneider, Richmond Hill, N. Y.; and John Covington Tinsley, Jr., Lynchburg.

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Committee of Arrangements for State Meeting.

As previously announced, dates selected for the 1943 meeting of the Medical Society of Virginia are October 25-27, in Roanoke, with headquarters at Hotel Roanoke.

Dr. John O. Boyd was appointed as general chairman and he has selected the following to serve with him:

DR. F. A. FARMER—*Commercial Exhibits.*
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New Tumor Clinic.

Dr. Edwin P. Lehman, chairman, announces that the Cancer Committee of the Medical Society of Virginia has extended certification to the Dixie Hospital of Hampton as a Tumor Clinic at which funds publicly subscribed can be spent for the care of indigent patients. This Clinic will be under the directorship of Dr. Albert A. Creecy and will be known as The Dixie Hospital Tumor Clinic.

Virginia Society of Ophthalmology and Oto-Laryngology.

The twenty-fourth annual meeting of this Society will be held in Lynchburg on May 15th. Since many members are in the Service, all who possibly can attend are urged to do so in order to make the meeting a success. There will be two guest speakers.

Dr. Guy R. Fisher, Staunton, is president, and Dr. Meade Edmunds, Petersburg, secretary-treasurer.

Superintendent of Pine Camp Tuberculosis Sanatorium.

Dr. B. B. Bagby, Jr., Richmond, has been appointed superintendent and medical director of Pine Camp, succeeding Dr. George A. Welchons who resigned to enter private practice. Dr. Bagby has

been at this institution since 1939 where he has served as assistant medical director. Dr. George S. Row, resident physician, will be promoted to assistant medical director.

1893 Class Reunion.

Eight members of the class of 1893 of the Medical College of Virginia held their reunion at the time of the College Commencement on March 20. There were twenty-two members in the original class and fourteen of these are living. Those present at the reunion were: Drs. Charles A. Easley, Blairs; A. E. Turman, J. J. Anderson, and L. P. Michaels, all of Richmond; T. W. Dew, Fredericksburg; Garland Carter, Boydton; N. P. Snead, Cartersville; and G. Craig Eggleston, Amelia.

Dr. Thomas N. Spessard,

Who formerly practiced in Norfolk as a specialist in neuro-psychiatry, has recently been promoted to the rank of Commander in the U.S.N.R. He has been on active duty since October, 1940.

Promoted in Medical Corps of Army.

Two Richmond doctors recently promoted from the rank of captain to that of major in the Medical Corps of the U. S. Army are Dr. E. M. Holmes now stationed at Randolph Field, Texas, and Dr. Robert V. Terrell who is at Memphis, Tenn.

International College of Surgeons.

The Fourth International Assembly of the College will be held on June 14, 15 and 16 at the Waldorf Astoria Hotel in New York City, it is announced by Dr. Fred H. Albee, International President. The program will be devoted to war surgery and rehabilitation and delegations made up of prominent surgeons from the United Nations in addition to those from other countries are expected to attend. The United Nations representatives will give outstanding examples of the progress being made in war surgery and rehabilitation under battle conditions by their respective countries.

Dr. G. Foard McGinnes,

Director of the Bureau of Communicable Diseases of the State Department of Health before leaving Virginia for Tennessee in February 1939, has been appointed director of medical and health service of the mid-western area of the American Red Cross, with headquarters in St. Louis.

Dr. William Bickers,

Richmond, by invitation recently addressed the Brooklyn Gynecologic Society on the subject, "Primary Dysmenorrhea". Members of the county society and gynecologists of New York City were invited to this meeting which followed a formal dinner.

Industrial War Conference.

The American Association of Industrial Physicians and Surgeons, The American Industrial Hygiene Association, and the National Conference of Governmental Hygienists are combining their annual meetings in a four-day "War Conference" at Rochester, N. Y., May 24-27. This meeting will be a report on the state of the nation in matters of industrial health and all phases of this subject will be fully discussed. An invitation is extended to all doctors who are interested in these problems to attend as many sessions as possible. There will be no registration fee.

Dr. Anthony J. Borowski

Has been appointed chief clerk and statistician of the Richmond Department of Public Health. Until recently he was chief of the health section of the Federal Works Agency, WPA., in Washington.

Speakers at Staff Meeting at Fort Eustis.

At the February 24th weekly conference of the Station Hospital Staff of Fort Eustis, Dr. Robert L. Payne of Norfolk was the principal speaker. Dr. Everett I. Evans of the Medical College of Virginia, Richmond, was the guest on March 3rd, his subject being "Burns".

American Public Health Association.

The Executive Board of this Association announces that they will sponsor a three-day Wartime Public Health Conference in New York City, October 12, 13 and 14. The 72nd Annual Business Meeting of the Association will be held in connection with it. The Conference program will be devoted exclusively to wartime emergency problems as they affect public health and the public health profession.

Married.

Dr. John Randolph Kight and Miss Nancy Pearis Edgar, both of Charlottesville, March 6th. Dr. Kight is a graduate in medicine of the University of Virginia, class of 1938, and is now on the

Staff of the University Hospital. He is a son of Dr. and Mrs. Rufus Kight of Norfolk.

Dr. William Watkins Walton, Petersburg, and Miss Lucille Loving Webb, February 13th. Dr. Walton is a graduate of the Medical College of Virginia in 1942 and is serving an internship at the Norfolk General Hospital, Norfolk.

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Obituary Record

Dr. Clifton Meredith Miller,

Well known specialist of Richmond, died February 26th, after having been in ill health for several months. He was born in Richmond in April, 1873, and studied medicine at the Medical College of Virginia, receiving his diploma from that college in 1892, and later served on the faculty of his alma mater. Dr. Miller was also prominently identified with the social and civic life of this community and was a Mason. He had been a member of the Medical Society of Virginia for nearly forty-nine years, and held membership also in many other professional organizations. He was for twenty-one years a member of the City School Board, was at one time a member of the City Democratic Committee and also of the Richmond City Council. In 1937 he was elected governor of the Society of Colonial Wars in the State of Virginia. Dr. Miller is survived by four children.

Dr. Hawes Campbell,

Enfield, died suddenly on February 23rd. He was sixty-seven years of age and graduated from the former University College of Medicine, Richmond, in 1898. Dr. Campbell had been a member of the Medical Society of Virginia for forty-four years and was a member of the Advisory Board to the Woman's Auxiliary. His wife and five children, one of them Dr. Hawes Campbell, Jr., survive him. A brother is Dr. Clarence Campbell of Sparta.

Dr. Henry Taylor Miller,

Washington, D. C., died February 7th, at the age of sixty-one. He graduated from the former University College of Medicine, Richmond, in 1905, and practiced for a time in Staunton before going to Washington where for the past twenty-three years he specialized in diseases of the eye, ear, nose and throat. He was staff surgeon at the Episcopal Eye, Ear and Throat Hospital and also a member of the staff of Doctors' Hospital. Dr. Miller had been a member of the Medical Society of Virginia since 1909, and was a member of the Medical Society of the District of Columbia, the American Medical Association, and other organizations. His wife survives him.

Dr. Edmonds Droke Rollins,

Bristol, Va.-Tenn., died on January the 6th of carcinoma of the throat. He was fifty-five years of age and graduated from the former University College of Medicine, Richmond, in 1909. He was for some time a member of the Medical Society of Virginia.

Dr. Robert Hamilton Williams,

Passed Assistant Surgeon in the U. S. Navy, with rank of lieutenant, formerly of Lynchburg, was killed in action in the battle of the Solomon Islands, November 13. He graduated from the University of Virginia, Department of Medicine, in 1938.

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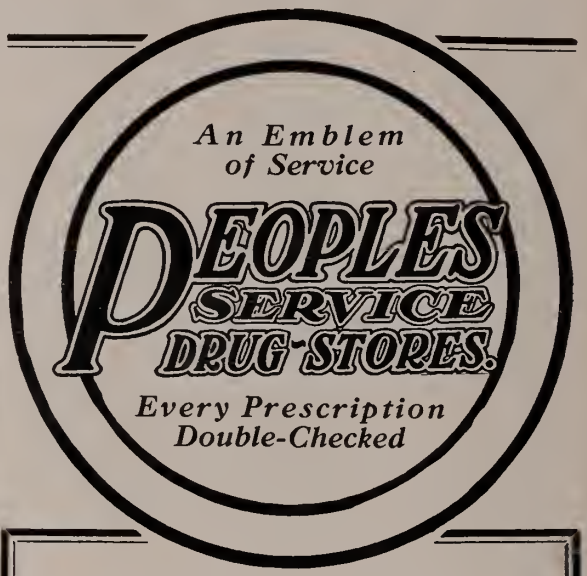

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Guest Editorial

Washington Conference on Eclampsia

HYPERTENSION and albuminuria in pregnancy constitute pathological states of broad interest to the clinician and research worker alike. A public health program of vast proportions exists as a result of these phenomena. To the public health officer, general practitioner, the obstetrician, the internist, the endocrinologist, the physiologist, the pathologist, the metabolism expert, and even on occasion to the surgeon who often justly prides himself on his ignorance of obstetrics but still at times cuts out a baby in an emergency, hypertension and albuminuria in pregnancy still present a pretty much unanswered challenge.

In Washington, D. C. in January 1941 a meeting was held under the auspices of The United States Department of Labor, Maternal and Child Health Division, Children's Bureau, called "Conference on Eclampsia". It was unfortunate, but obviously necessary, that attendance was limited. Many men, outstanding contributors, were not invited. It is understood that in future meetings, when the war permits resumption, all such individuals will be asked to appear. A representative group, however, was present and the attempt was made to determine from these men what we know and do not know about the subject. For two days in long morning and afternoon sessions representatives of clinical and scientific medicine spoke their minds and at times hotly discussed as many problems concerning hypertension and albuminuria and edema in pregnancy as time permitted. The proceedings were published in mimeograph form for limited distribution. It is unfortunate that these could not have had wider circulation.

For some years before the Conference it had seemed that a cooperative effort to study this subject was indicated since it is a major cause of maternal and fetal mortality. To make such a cooperative effort possible it was necessary for component clinics of this effort to talk a common language. Hence an American Committee under the Chairmanship of Dr. Mussey was appointed to formulate a universally acceptable—if tentative—classification. The classification of the American Committee permits accepting clinics to study cases in common groups. By forwarding data so obtained to a collecting agency it seems probable that within a reasonable time factual conclusions in these groups as to pathology, prognosis, treatment, and other at present unknowns can be drawn in more convincing fashion than is possible by individual men or clinics.

A plan to improve an unsatisfactory situation must be judged by its accomplishment not by its ideology. By this standard it must be said that we have a long way to go. We have established a relatively common language for hypertension and albu-

minuria in pregnancy but we have made no provision for the collection of data, with intelligent analysis, and the dissemination of facts so culled.

In the words of Dr. Daily at the Washington Conference, "There are two things we hope to accomplish in this meeting. First to record a thorough discussion of the known facts concerning the late toxemias of pregnancy and, second, to consider suggestions concerning future research in this field that might be carried on in various clinics throughout the country."

Lest we appear to raise a problem only to attack it, we set down for consideration certain outstanding matters of discussion and of disagreement at the Washington Conference.

It is true that differences of opinion were expressed in at least half of the subjects discussed. Not all of these can be noted here.

It was hotly debated whether or not eclampsia is a disease peculiar to pregnancy or a manifestation of "acute hypertension", so to speak, because of its occurrence in the pregnant state. As an obvious corollary the cause of eclampsia was not agreed upon. The allied question of the applicability and usefulness of the American Committee classification, or any other for that matter, was answered in the affirmative by some and in the negative by others. A similar difference of opinion was expressed as to the time, if this classification is used, for diagnostic indexing of each case, whether on discharge from the hospital or after three, six, or twelve months follow-up, or even longer.

While the importance of edema in the eclamptic state was generally accepted, and the effect of sodium in its production largely agreed upon, the method of its production, its relation to fluids in the absence of sodium, the place of hypoproteinemia and capillary permeability as well as other factors were subjects for discussion. Opinions differed as to its importance as a cause of the convulsions in eclampsia.

The behavior of the heart and its relationship to pulmonary edema in eclampsia and the use of digitalis gave rise to the expression of marked differences of opinion.

This question was raised and not settled. In post toxemic pregnancy is the hypertension the result of the toxemia or the toxemia the result of the hypertension? There was discussion and some disagreement as to the differential diagnosis between mild hypertensive disease and mild preeclampsia. The importance of pyelitis and pyelonephritis in relation to the eclamptic state was not agreed upon. There was no concensus of opinion with regard to the place of placental pathology in hypertensive albuminuric pregnancy—either in effect on "toxemic" still births or in relation to hormonological concepts of these diseases. No one knew convincingly the diagnosis or best treatment of pregnancies complicated by marked albuminuria with little or no hypertension. There was expressed difference of opinion regarding nephrosis in pregnancy. There was complete lack of agreement as to the importance of low metabolic rates in relation to the production of the toxemias of pregnancy, as well as to the value of blood cholesterol estimations, and the value of thyroid feeding as a prophylactic agent. No one could say what percentage of acute glomerular nephritis is followed by chronic glomerular nephritis. There was lack of agreement as to the specificity of pathological changes especially in the liver.

Mortalities cited in the same disease, namely, eclampsia, ranged from 2 to 25 per cent. No single method of medical treatment was agreed upon. Morphine had advocates; others were definitely opposed to its use. The use of magnesium sulphate by mouth raised debate; its use by vein or muscle with or without morphine and/or the

barbiturates and/or paraldehyde provoked discussion as to dosage, method of administration and its dangers. Refined veratrum viride was mentioned and largely condemned, yet its pharmacological action as a vasodilator and results in Cincinnati by its use certainly entitles it to consideration.

Although it was the general opinion that hysterotomy has no place in the obstetrical treatment of eclampsia, there was a definite difference of viewpoint as to its merits in fulminating preeclampsia and in primiparous preeclampsia demanding delivery. No definite statistics as to its relative merits as opposed to induction from below by rupture of the membranes or bagging in these conditions could be presented. Anesthesia, local or otherwise, in the delivery of "toxemic" patients both from above and below was a subject for debate.

We have recorded only the major items on which disagreement was marked. Since, however, these are fundamentals, it would seem that better results might be obtained in this group which contributes so largely to the maternal and fetal mortality of this country if some reconciliation of ideas could be attained through cooperative statistical study. It may be argued with some justice, if we judge by a slow and steady improvement in mortalities, that the ordinary process of evolution is accomplishing this reconciliation of ideas. That this process is unduly slow is proved by the listing above. Meanwhile many lives are lost each year. Therefore, we conclude that within the limitations imposed by the war, the sooner a practical mechanism is set up for this purpose the better.

We believe that the only suitably equipped agency for the collection of this data is the Children's Bureau in Washington. It has been pointed out that the mere collection of data in one place is not enough to give desired results. Analysis of this data by competent individuals is said to be an absolute requisite. With this we agree. We believe also that a small number of completely worked up cases from many clinics is essential rather than greater amounts of material less carefully studied. For analysis and coordination and for conclusions drawn, a small committee of representative interests in the field would serve. This plan, as has been demonstrated, worked well in the American Committee for Classification.

Such a committee, working with the Children's Bureau as a collection agency with its statistical experience, would in five years of actual activity go far to smooth out our differences and establish facts for etiology, prognosis and therapy in this major cause of obstetrical mortality and morbidity.

FOSTER S. KELLOGG, M.D.

EDITOR'S NOTE. Dr. Kellogg is clinical professor of obstetrics at Harvard Medical School. For years he has been interested in eclampsia and is an authority on the classification of toxemias of pregnancy.

Floral Eponym (3)

THE *Spring Beauty,* Clatonia, is named for John Clayton (c. 1685-1773) of Virginia, the botanist. There is some doubt as to whether John Clayton practiced or even studied medicine. His brother Thomas graduated in medicine at Cambridge and it is argued that it was unusual for two brothers in Colonial Virginia to study medicine. On the other hand in the third edition of his *Flora Virginica* the title M.D. is added to his name. Toner, Thacker, and Thomas Jefferson also speak of him as a doctor of medicine. He wrote extensively upon medicine, chemistry, and botany, but that means little, for many with no medical training wrote upon and even practiced medicine in those days.

EMOTION AND ITS HOME FRONT REACTION*

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A state of fear is the emotion that could upset the home front. When we consider the problem of fear the following questions arise, more or less in order:—

1. What is fear?
2. What do we fear?
3. What are fear reactions?
4. Why do we develop disturbing fears?
5. What should we do about these fears?

Although there is of necessity some overlapping, let us briefly discuss these questions.

What is fear? Webster's Dictionary wisely says, "Fear is a most general term" and then goes on to state, among other things, that fear is a painful emotion connoting alarm, dread, disquiet, anxiety, concern, dismay, disconcertion, apprehension, consternation, terror, and panic. I might add that the obsession by some particular fear constitutes a phobia. But, in my opinion, these definitions, although factual, do not delve deeply enough, and we shall have to consider a state of fear as either a transient or an older and at times a constitutional reaction of the hypothalamus whose sympathetic and parasympathetic connections carry the feeling-tones of stimuli created exogenously or endogenously by imagination or suggestion or by anticipated or actual event. Anticipation is frequently the worst part of pain and the best part of pleasure. The real coward is not the person who is full of fears, for he is ill, but the normal individual who deliberately decides not to risk his hide, his possessions, or his position for what is desirable, patriotic, or right.

Fear properly appreciated and controlled is defensive and beneficial as fear to do evil, fear of avoidable risks, fear of disastrous consequences, and the reasonable fear of disease or of injury to self or to others. The daredevil is not necessarily brave, but often only ill-balanced and reckless. It seems needless, however, to remind this audience that unwarranted or even warranted fear not controlled, directed, and balanced by reason may lead to irregularity of behavior, physical or mental illness, or possibly to death either unconsciously induced, for instance, in certain cases of self-starvation, or by conscious suicide. Three hundred and fifty years ago Sir Philip Sidney, in his poem, "Arcadia," wrote:

> "Fear is more pain than is the thing it fears,
> Disarming human minds of native might,
> While each concern an ugly feature bears
> Which were not evil, well weighed in Reason's light."

In discussing *what do we fear,* possibly the answer is more simple in spite of numerous embracements. We more commonly fear injury, disease or death, or so-called acts of God, wrath of God, punishment, disgrace, insecurity, and a hundred other things which may lead toward real or supposed disaster or calamity. These fears are frequently associated with vanity in the individual and an undue idea of personal importance in that he may feel that he is picked out by man or God to be especially imposed upon. It is said that the newborn is void of fear, but this must be because of immature development of the hypothalamus and of the fronto-psychic centers, for defensive fears are instinctive, at least in the opinion of many of us. As we grow, tribal taboos, conventions, laws, religious dogma, unexplained happenings, discomforts, and, also, the concepts, the examples, and the suggestions of others instigate, teach, or compel fear in the individual. One may even fear not to fear.

The *reactions of fear* may be the elaborations of, or the estimated consequences of, the ordinary things we fear and may involve or lead to such conditions as phobias, rituals, supplications, and persecutory ideas; or to a desire for escape, as shown in alcoholism, drug taking, and sex irregularities; or, consciously or unconsciously, to assumed illness, amnesia, scourging or mutilations, bizarre or actual suicide. Fear reactions are due to the overtone sensitivity of the hypothalamus and its connections which carry efferent and afferent impulses, spoken of as feeling-tones, to and from the various systems, organs, and tissues of the body and producing not only mental and emotional, but also somatic complaints which may or may not lead to organic conditions. On the other hand, organic lesions may,

*Read at the meeting of the Neuropsychiatric Society of Virginia, February 16, 1943, at Richmond.

through feeling-tones going to the hypothalamus, inaugurate emotional fear states.

Through psychic—thalamic—hypothalamic connections we may have mood swings, possibly even to the extent of manic depressive psychosis or anxiety states or obsessive or persecutory states; through the vagus connections, vagotonia; through the voluntary motor system, restlessness, habit spasm or retarded movements; through the involuntary motor system, diarrhea or constipation, hypertension or lowered blood pressure; through the endocrine system, over or under secretion of the ductless glands; through genital connections, disturbance of the generative organs and of sex activities; through various mechanisms, change in body fluid, body chemistry, and body rhythms. These are only some of the reactions which are evolved from the emotion of fear.

Some of the immediate reactions of fear may be involuntary vomiting, urination, defecation, screaming, dumbness, transient blindness, flight, immobility or death simulation. These manifestations may disappear quickly or be prolonged, for instance, into frequent vomiting or urination, chronic diarrhea, prolonged disturbance of speech and vision, a sense of weakness, or long periods of unreality.

Fear reactions are at times even of more amazing complexity and may account for ogocentria or for the clowning fool, the hero or the hermit, the egotist or the obsequious, the malingerer or the frustrate, the hypocrite or the obvious sinner, the foreflusher, or the mealy-mouthed, the mendicant or the murderer.

One of the reasons *why we develop fear* through an inherited or an acquired hypersensitivity of the hypothalamic apparatus is a lack of the even development of our powers of perception, conception, reason, will, and judgment. The hypothalamus, the most ancient part of the brain, may be affected from a morphological, physio-chemical, pathological, or a purely functional standpoint. Thus improper development, body chemistry changes, injury or disease, or psychogenic trauma or even excitement may affect its manifestations. The hypothalamus consists of various accumulations of cells—motor-like cells, neuro-secretory cells, cells of special function as for temperature, water balance, pulse rate, menstrual rhythm, blood pressure stability, and for the emotional status; and the greatest of these hypothalamic functions is the emotions.

If the emotions are upset, the other functions of this area are upset. Emotions are more likely to be disturbed in those who have been over-protected, in the only child, in those who have been accustomed to comforts and conveniences, and in those who have been indulged, undisciplined, and untrained in emotional control.

Emotions may be individual or *en masse*. Fear is one of the most common of the emotions and probably the most powerful except that of love—love of the opposite sex, love of the family, love of home, love of country, love of mankind, love of God. Both fear and love are contagious, but fear is more immediately contagious than love.

Fear on the home front is more common than fear in the armed forces. There are many obvious reasons for this; for instance, lack of discipline, lack of camaraderie, lack of organized purpose. But there are other more or less subtle reasons for civilian fear in war time, such as absence of immediate danger of attack by the enemy or lack of the thrill of an impending attack on the enemy—either of which when present will pour out adrenalin, strengthen the self-preservation defensive mechanisms and shunt fears aside in favor of the aggressive instinct. In the neuropsychiatric clinic at St. Thomas' Hospital, in London, there were far fewer emotionally disturbed psychoneurotic patients during the bombing period than before. Many examples of this could be given. "They also serve who only stand and wait", but their service is more "jittery," if I may be excused the expression.

It is the uninformed, the expectant, the insecure, the propagandized, the misled individual or group that gives away to emotional fears, or to neuropsychoses on the home front. Tell them the truth, as far as is militarily possible, about what has happened or what is happening or what is likely to happen. Organize them purposefully and let them know as accurately as can be estimated what sacrifices will be required, give them unsensationalized information, teach them solemn, solid respect for country and cause regardless of politics or aggrandizement and cut out "hooplolly" propaganda. Churchill's blood, sweat, and tears speech is an excellent example. Tell the truth, and the number of those emotionally, nervously, and mentally disturbed will materially lessen. "Truth crushed to earth shall rise again", but why crush it to earth merely to witness its resurrection.

I am not one who thinks the regular forms of insanity are increasing, but I do know that on the home front in this country there is an unnecessary increase of those disturbed by the emotion of fear and its reactions which lead not often to insanity but frequently to the disruption of the war effort.

How should we treat those who have developed fear states? Assuredly not by barbitals, bromides, and opiates unless at times in transient and small quantities. Psychoanalysis is not applicable or effective in these cases because of the time element and because in many of them early psychgenic trauma cannot be elicited. However, a careful investigation of the patient's difficulties and situation is necessary and it is important to establish rapport with the patient in order that explanation of emotional control, re-education, and sane advice may be given. Dr. Weir Mitchell used to say that the best medicine is often not given in a teaspoon or in a pill but is in sound advice.

The proper regulation of rest, sleep, diversion, exercise, and food is necessary. Excesses of alcohol, tobacco, coffee, and other injurious habits should be interdicted. Vitamin deficiencies, anemia, and physical disturbances should be corrected.

Several years ago we studied 18 cases at the Tucker Hospital that had emotional illness and to whom we had given belladonna root extract (rabellon) in doses of from one-half to three-fourths of a tablet three times daily for fifteen days or more. Then Dr. Harry Brick and I checked the results and found 12 of the 18 cases either very greatly improved or recovered, 5 cases showed moderate improvement, and 1 case did not improve.

Of these 18 patients, 13 were females and 5 were males. Their ages varied from 24 to 72, the average being 45. Fears or phobias, anxieties, and somatic complaints occurred in all cases. Weeping, irritability, or temper spells were present in 14 cases. Low mood swings without the history of past deep depressions or manic periods were present in 14 cases. Low blood pressure appeared in 11 cases and excessive blood pressure in only one. Other frequent symptoms were admitted suicidal ideas, disturbance of libido, fatigability, persecutory ideas, resentments, vagotonic manifestations, insomnia, and difficulty in concentration except in matters concerning self. Frequent laboratory findings were lowered blood calcium and blood sugar and moderate secondary anemia. May not these symptoms and manifestations constitute an hypothalamic fear syndrome? I think they may.

In emotional states, general massage and hydrotherapy are indicated in some cases. Insulin in doses of ten to twenty-five units half an hour before breakfast and lunch and a smaller dose before the evening meal is often helpful. When insulin is thus used some form of sweet should be served with the meal. Also, the patient should be observed for delayed reactions. Although useful in other conditions, rarely are insulin shocks, metrazol shocks, or lobectomies desirable in these particular cases. However, electric shock treatments given three times a week for from four to twelve shocks are effective in a large majority of severe cases—especially if psychotherapeutic suggestions are also given.

In *summation,* I might state that, in my opinion, emotional instability and illness is due to hypothalamic irritation, stimulation, or hypersensitiveness; that fear is the chief expression of these emotional conditions; that various somatic, endocrine, and body chemistry disturbances occur and that these, with the other manifestations mentioned, group themselves into what might be considered a syndrome.

I believe fear manifestations are on the increase in our civil population due to anticipatory apprehension rather than to actual deprivation or danger, and that they may be largely prevented by truthful knowledge of what has taken place, what is taking place, and what is likely to take place, that is, of course, as far as military expediency will permit. Reality is easier to face than uncertainty. While the rational development of patriotism is preventive and sometimes curative, propaganda is always dangerous and often harmful.

In the therapy of these hypothalamic fear states, sedatives should be avoided as much as possible; belladonna derivatives have a place, rational psychotherapy is useful, body and habit regulation is essential, and in severe cases quieting doses of insulin and especially electric shock treatments produce striking results.

The recognition and sympathetic understanding of these fear emotion states is essential—both in winning the war and in establishing satisfactory world reorganization after the war.

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ACUTE CIRRHOSIS OF THE LIVER*

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The word cirrhosis, meaning yellow or tawny, was first used by Laennec to describe the atrophic liver disease which bears his name, but with long usage the term has become synonymous with sclerosis or fibrosis. There are many causes of fibrosis of the liver. Chronic biliary obstruction with or without infection will cause enlargement and increase of fibrous tissue with the primary pathology about the bile radicals. This is called hypertrophic biliary cirrhosis. The chronic cirrhosis of Hanot produces the same type of picture and is of unknown etiology. Acute and subacute yellow atrophy after recovery usually leave a small sclerotic liver. Healed liver abscess and chronic syphilis of the liver can produce cirrhosis. In the indefinite condition called Banti's disease, atrophic cirrhosis of the portal type usually develops.

In this discussion we are more interested in portal cirrhosis where it seems evident that the toxic product causing the liver disease reaches the organ through the portal veins. This poison may be chemical, bacterial, or possibly a protein decomposition fraction. Along with these there may be a qualitative or quantitative defect in the diet intake. Of the chemical poisons which have been incriminated, alcohol is clinically the most important. Connor[1] states there can be little doubt that alcohol and the habits induced by the consumption of large amounts of alcohol are the most important factors in the production of fatty liver which progresses, in at least some cases, to cirrhosis. Boyd,[2] on the other hand, says, "At present there does not appear to be sufficient evidence to justify the term alcohol cirrhosis." The cirrhosis which is occasionally seen in non-drinkers and even babies could easily be caused by some of the other factors mentioned above. In the reported series of cases of cirrhosis of the liver which have come to my attention, a history of chronic alcoholism was recorded in at least three-fourths of the cases. The fact that typical portal cirrhosis has not been reported in laboratory animals given alcohol in varying amounts does not rule out alcohol as a cause since it is difficult to reproduce the combination of conditions over a long period of time that leads to the disease in man.

It is evident that some human beings can take large quantities of alcohol daily for many years with impunity, but their histories will disclose that they also take an adequate diet. The individual who substitutes alcohol for food for days or weeks, or who repeats the performance at frequent intervals, is almost certain to damage his liver.

It is known that fatty infiltration of the liver may result from the effect of bacterial toxins, from poisons, such as chloroform or carbon tetrachloride, and spontaneously in certain cases of diabetes mellitus where there is serious interference with fatty metabolism.

The acute cirrhosis of the liver which I am discussing today should really be regarded as acute fatty liver. Connor[1] has divided his cases of portal cirrhosis into three groups: (a) Acute fatty liver which occurs in the 40 to 45 age group. In these the liver is large, usually smooth, pale in color and contains as much as 60 per cent of fat. (b) The fatty liver showing definite and progressive perilobular fibrosis. The organ in this stage may be enlarged or normal in size. This stage is most often seen in the 45 to 55 age group. And (c) the older age group where we find the liver small, nodular, and with usually a thickened capsule.

From my own experience I am convinced that continued or repeated consumption of a large amount of alcohol and a diet markedly deficient in carbohydrate and protein will lead to toxic change in the liver cells along with fatty infiltration; the resulting disturbance of liver function can in a relatively short time produce serious illness and, sometimes, death unless prompt treatment is instituted.

During the past ten years I have had the opportunity of observing five men, varying in age from 30 to 36 years, who presented the typical findings of acute fatty liver and in whose histories the combination of alcohol and dietary deficiency clearly indicated the etiology. The first of these individuals, seen in 1932, gave an alcoholic history of only two months' duration. Because of uncertainty in the diagnosis of this patient, the abdomen was ex-

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

plored and a biopsy taken from the liver. The pathologist reported marked fatty infiltration of the liver, moderate cloudy swelling and degeneration of the liver cells, extensive deposits of leucocytes and early evidence of fibrosis. This patient went steadily down hill and died one month after he was first seen.

All five of the patients presented varying degrees of hepatomegaly. In two the liver extended below the right iliac crest; the livers were firm but smooth and were definitely sensitive to pressure. Jaundice, either obvious or latent, was present in all the cases; two of these had gross epistaxis which ceased promptly with the administration of parental vitamin K; four showed definite anemia and in two of these the anemia was of the macrocytic type, indicating an interference with the utilization of the X factor of Castle; one of the severe cases who recovered had marked retention of bromphthalein; mental apathy was present in all cases and one was in semi-coma when he entered the hospital. Two of the five presented clinical evidence of ascites which was not sufficient to justify removal; a third had moderate ascites on exploration of the abdomen. An interesting finding in all of my cases was definite albuminuria without other evidence of nephritis. This is a commonly reported finding in severe liver disease.

Gottardo and Winters[3] have recently emphasized the profound disturbance of protein metabolism in these cases. In their 24 cases, the total serum protein was less than normal in only three but the serum albumin was decreased in 23 of the 24 patients; the globulin fraction was elevated in 21 with a reversal of the albumin globulin ratio in 16. This is in accord with the findings of others in severe parenchymal liver diseases.

Three of my patients had low grade fever and intermittent leucocytosis during the early period of their hospital stay, indicating a definite inflammatory process in the liver. Another interesting finding was elevation of blood pressure, especially the diastolic, during the acute period with fall to normal after recovery. This seemed to parallel the albuminuria and may have been due to some pressor substance originating in the kidneys.

In none of the five cases was there evidence of severe B complex deficiency but during recovery one of the seriously ill patients complained a good deal of pain and numbness in his legs, suggestive of polyneuritis.

The treatment of these patients can be divided into immediate medical and later prevention of recurrence. The first indication is to flood the body with glucose and to buffer this with insulin. This serves two purposes, it provides the liver with an adequate supply of glucose and the alcohol in the tissues is rapidly oxidized. As soon as food can be taken by mouth, a high carbohydrate, and in the light of experiments reported by Elman and Heifitz,[4] an adequate protein diet should be ordered. This diet should be fortified by a rich source of the vitamin B complex, and if macrocytosis is present parenteral liver extract is indicated; if prothrombin lack is evidenced by bleeding, adequate parenteral vitamin K should be administered. The effect of this was most striking in one of my cases who had had severe nosebleed for ten days. Although he had a large ulcer on his nasal septum, the result of repeated cauterization, epistaxis ceased in twelve hours, and the extraction of an abscessed tooth eighteen days later was not followed by unusual hemorrhage, although his icterus index at this time was 47. I have not found under the above regime much need for sedatives and only occasionally additional alcohol. The follow-up medical treatment consists of absolute avoidance of alcohol and insistence on an adequate diet.

Under modern treatment the immediate prognosis in acute cirrhosis is good. The signs of liver failure clear and the liver gradually shrinks and in none of my four surviving cases has there developed evidence of atrophic changes. The major problem with these individuals is preventing them from relapse. I frankly tell them that further indulgence will constitute slow suicide, yet one of them was in my office September 11, 1942, with recurrence of hepatomegaly but he denied having taken more than an occasional drink. Though at the time his breath reeked with the odor of whiskey, he flatly denied having taken a drop for forty-eight hours. He, like so many opium addicts, has become a pathological liar.

One of my severe cases has remained entirely off alcohol for nearly two years and his liver function seems entirely normal but he frankly states that the only way he can stay away from alcohol is by taking a fairly large quantity of one of the barbiturates which seems to give him very much the same mental effect that he gets from alcohol. So far the drug has not seemed to harm him in any way and I have

not suggested that he discontinue it. Perhaps it may be well to provide a harmless substitute for some of them, since in my experience the results of treatment in the hands of competent psychiatrists has not been particularly encouraging.

As substitution therapy to prevent relapses in chronic alcoholism, Miller[5] has recently emphasized the value of amphetamine sulphate to overcome the let down, depressed state that drives these victims back to alcohol. Voegtlin[6] and his coworkers have published a number of articles during the past few years dealing with what they call the conditioned reflex treatment of chronic alcoholism. The basis for this treatment is the urging of alcoholic drinks on the patient immediately after he has been given a strong emetic. Excellent results have been attained in their hands but naturally any treatment of this type should not be attempted in the presence of a severely damaged liver. It might well be considered in the early stages of relapse from abstinence.

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Professional Building.

DISCUSSION

DR. BLANTON PAGE SEWARD, Roanoke: We have listened, I am sure, with pleasure and profit to Dr. Davis as he described the clinical features of acute cirrhosis that occurred in his patients who had indulged excessively in alcohol, and also to his description of the pathology found in some of his patients who died. The chief point that he wished to emphasize, it seems to me, was the occurrence of acute cirrhosis at an early age, for few if any of his patients had attained their fortieth year. The pathology—fatty liver with some evidence of sclerosis—found in his cases, like that found by a few other men who have reported similar cases, was the same as the pathology that was found in older individuals who had acute hepatitis. While the disease is serious, yet all the patients, as Dr. Davis said, did not succumb to it. If we bear in mind the facts that this disease may occur in young individuals following alcoholic debauches, and that some of them unfortunately do succumb, we will not be as much puzzled concerning the cause of death which in every case cannot be attributed to congestive heart failure. On the other hand, as you know, congestive heart failure seems more often to be the cause of death of individuals who have portal cirrhosis, the chronic disease that usually occurs later in life and that is thought also to be due largely to alcohol, and the disease that usually comes to mind when cirrhosis is mentioned.

The etiology of acute hepatitis probably is not fully known. As Dr. Davis said, poor digestion and assimilation of food due to alterations in the saliva, in gastric juice, and in the mucous membranes of the stomach resulting from the consumption of alcohol over a prolonged period of time, and also modifications in the diet, including the substitution of vitamin-free alcohol for foods containing vitamins, are, in the light of our knowledge, factors in the causation of the disease. It is possible that alcohol may cause the disease through its effect, although unknown, upon the liver. In thinking further of the etiology, we must say that the constitutional factor may play a part, perhaps the chief part, in the causation of acute cirrhosis and that the ingestion of alcohol may facilitate its development. If this is true, alcohol would be a contributing rather than the chief factor.

In the treatment of patients with acute intoxication, Dr. Davis stated that he prescribed vitamin B complex as soon as the individual could take a regular diet. Since large doses of thiamine chloride have recently been employed in the treatment of acute alcoholism, I should like to ask him to comment upon its use in his discussion.

DR. DAVIS, closing the discussion: I should like to thank Dr. Seward for his discussion of my paper and would emphasize that these patients of mine were relatively young but their disease was subacute, that they may be seriously ill and even die from liver failure. The chief object in treatment is to restore liver function. As immediate treatment I feel that large quantities of glucose are necessary and it probably is helpful to use appropriate amounts of regular insulin.

Thiamin chloride is certainly indicated for the individuals who have evidence of polyneuritis and it is suggested in the literature that it may be a direct help to the liver given at very frequent intervals. In addition, these individuals should receive vitamin B complex.

I believe that liver extract parenterally should certainly be given to those cases which show a macrocytic anemia and my experience leads me to believe that it has a good effect even if there is no anemia, although I cannot give you a definite reason for this.

THE KENNY CONCEPTS*

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One of the major advances in medicine in the last decade was produced, not by an eminent scientist, clinician, or surgeon, but by a simple Australian bush nurse. Her name was Sister Elizabeth Kenny. Her contribution was a new concept of infantile paralysis and a new treatment for that concept.

Laughed at and scorned by the medical profession for thirty years, her work has been recognized in the United States for only four years. The only center which is doing any sustained and accurate work on the Kenny system in this country is the University of Minnesota, at Minneapolis.

To appreciate the magnitude of her work, a study of the Sister's life is essential.

Sister Kenny is an elderly woman of magnificent carriage and stature. Her challenging figure is topped by a face which is stern and unbending except when she is handling children. She has given a lifetime and personal fortune to the care of paralytics.

Sister Kenny was a self-made nurse in the wild bush country of Australia. She studied anatomy for two years under Dr. Aeneas John McDonnell, and in that time she learned the origin, insertion, and function of every muscle in the human body. Her practical and clinical studies of muscles may cause a revision of all anatomy texts. She believed that proper carriage and even mental attitudes are influenced greatly by muscle groupings and their application to living.

Taking care of a sickly brother stimulated her interest in the practical use of muscles. The Sister says she spent many years building his body, and only one who has seen the Kenny end-products can appreciate her end-results.

While traveling in the bush country, Sister Kenny came in contact with a series of cases which were all accompanied by fever, pain, headache, and prostration. At a loss for a diagnosis she sent a wire to Dr. McDonnell. His answer was, "It sounds like infantile paralysis. There is no treatment. Do the best you can."

She sat by their beds and began to wonder. A nurse is only trained to treat symptoms, to make the patient comfortable, so she began to study the symptoms. Having read never a word about infantile and with a mind unfettered by medical complexities, she came to a series of startling conclusions.

The first thing she noticed was that the patients were in great pain—heads were drawn back, feet were dropped, and the great muscle groups stood out like cords. When she touched these cords, the pain became more severe. She did not visualize paralysis—to her these muscles were in spasm. In the nurse's repertoire there is only one treatment for painful muscles, the use of hot foments. Out of these studies grew the great Kenny triad of spasm, alienation, and incoordination. But at least half the Kenny system is her muscle re-education which has made a shambles of the old concepts of physiotherapy.

To properly evaluate the Kenny concepts it is necessary to compare the old and new systems.

The pathology shows a diffuse involvement of the meninges, brain substance, and cord with particular reference to the anterior horn cells where most of the degeneration takes place. With these Sister Kenny cannot argue, because she is not a scientist.

The symptoms by the old system are flaccid paralysis, pain, and deformity. By this system, a foot-drop is caused by a paralysis of the anterior tibial with the opposing normal posterior tibial and gastrocnemius pulling the foot out of position. Pain and opisthotonos were believed to be caused by irritation of the nerve roots. Deformity was the trademark of polio in the old system, and this was prevented or treated by the use of splints. However, Steindler, of the University of Iowa, states that 25 per cent of polio patients develop deformities even in splints.

The symptoms by the new system are spasm, alienation, and incoordination.

Spasm is considered to be a painful shortening of muscles. Biopsies taken of living muscles in spasm show no changes, but very few muscle studies have been done. These muscles cannot be forced into normal position, even with pentothal anesthesia.

*Read at Dickenson-Buchanan Medical Society, December 16, 1942.

They do relax better with spinal anesthetics. Pain is caused by spasm.

Alienation is the term applied to the state of the muscle opposite the one in spasm. In other words, the muscle opposite the one in spasm is alienated and not paralyzed. The patient learns he cannot stretch the spastic muscle so the opposed muscle is alienated. This is a physiological block. However, Sister Kenny does admit that there is paralysis in about 17 per cent of cases.

By the old theories in a foot-drop, the anterior tibial muscle was paralyzed, the gastrocnemius pulled the foot down, and there was a foot-drop. By the old treatment, a few days' rest to get over the acute phase and then splinting, splinting, splinting—and finally braces, casts, and surgical repair.

The Kenny method conceives it as follows: By some unknown mechanism, the gastrocnemius is thrown into spasm and the foot is dropped. Finally, alienation takes place and a permanent deformity of foot-drop. The principle of the Kenny treatment is to release the spasm by hot foments and then begin muscle re-education, stimulating a path through the blocked myo-neural pathway.

The third important Kenny concept is incoordination. This is the result of improper muscle function and improper convalescent use of muscles. The result is deformity and peculiarities of stature and gait.

By the Kenny method there are no deformities, no braces, and very little if any incoordination. At the Gillette State Hospital in Minneapolis, there have been no admissions for polio deformities for several years. As a result of the lack of deformities, the orthopedic service has had no restorative work.

In other words, Sister Kenny believes infantile paralysis is a disease of muscles or, as she calls it, "a muscle condition", and she has evolved a treatment for that condition.

Sister Kenny despises the word hot-packs. She coins the phrase "hot foments". In this method, water is heated to boiling. Wool packs which have been cut to fit the patient are soaked in the boiling water. The packs are removed, pushed through a wringer twice to remove all the water, and then the pack is slapped directly on the affected muscle. It is then covered by a layer of oiled silk, and then by a cotton blanket which is pinned. The pack has been measured to have a temperature of 100 degrees and this is very, very hot. Speed in application is a vital part of the method and that is why hot-pack nurses working full-time are necessary in a large institution. The secret of not getting burns is using wool and getting every drop of water out of the pack.

In a severe case Sister Kenny packs the entire body from head to foot. When she first sees a case she does a muscle analysis without touching the patient and applies the packs accordingly.

The main portions packed are thighs, legs, feet, back, arms, forearms, hands, pectorals, and occasionally the abdomen.

By the Kenny concept breathing difficulties are due to spasm of the intercostals, sternomastoids, pectorals, and trapezii. Foments release these spasms. The Drinker respirator is physiologically unsound in that it whips an already tired muscle. There is no place for a respirator in the Kenny system.

After the spasm is diminished and acuteness has subsided, usually two or three days, muscle awareness and muscle stimulation is begun in bed. All this consists of is moving the affected part passively within the limits of his spasm.

When the spasm is well relaxed, the system of muscle re-education is begun. The first phase is three passive movements of the part just to show the patient what is expected of the part. At this time it is permissible to lightly stroke the insertion of the tendon. The second phase is two passives and an active. After the patient has been guided through two passives he is told to carry out the third maneuver by himself. The third phase is one passive and two actives. The end-result is three actives which means the patient is cured.

One patient was presented in the Minneapolis clinic—a girl of thirteen—with the most malignant type of polio. She was treated by the Kenny method from the beginning. When we saw her many months after the onset, there was no muscle power demonstrable in any of the leg muscles. Yet she was able to walk without braces and with the aid of a cane. She was also able to do housework.

By the old method, this girl would have been hopelessly invalided, and I do not believe she would have been able to walk even with braces. This was the "worst" result seen in the Kenny clinic, a failure by the Kenny standards—a success by any other standard.

Another of the Kenny theories is that a muscle contracts either inside or outside its normal resting length. The anterior tibial which normally contracts in its normal resting length is stretched so by the spasm of the gastrocnemius that it is forced to contract outside its normal resting length and this results in alienation of the anterior tibial.

Another cause of respiratory distress and inability to swallow is spasm of the posterior neck muscles. Many of these cases are not true bulbar cases and are quickly relieved with heat.

Another Kenny concept is that the gluteus maximus is not an extensor of the thigh but merely fixes the thigh to the pelvis. This will be a cause of considerable anguish to anatomists.

Another key muscle in the Kenny system is the psoas which is the chief flexor of the thigh. Loss of use of the psoas without its re-education will result in incoordination of the thigh on walking.

Another key group are the long muscles of the back. Scoliosis and lordosis are only two of the severe deformities seen by the conventional treatment. Now we know that these deformities are produced by contractions of the long back muscles, or psoas, and their release from spasm will in 100 per cent of cases correct the deformities before they begin.

An old bogey was the "abdominal paralysis" which was often described by orthopedists. This condition is no longer seen. We know now that it is due to spasm of the pectorals and back muscles resulting in alienation of the abdominal muscles. A Kenny patient never has abdominal paralysis.

In conclusion, let me say that I went to Minneapolis to jeer and returned to cheer. There is much to be done and much to be explained. But Sister Kenny has given us a push in the right direction.

THE PHYSICIAN'S RESPONSIBILITY IN PLANNED PARENTHOOD*

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Recent studies of the causes of maternal deaths have resulted in a marked reduction of deaths associated with child-bearing. In Virginia in 1931 there were 7.8 women who died for every 1,000 babies born alive. In 1941 this rate was reduced to 4 maternal deaths per 1,000 live births.

This decrease in the risks associated with childbirth in Virginia is a direct result of an educational program for the physicians, and the patients, and the extension of the State Health Department's Prenatal Clinics.

Physicians are continually searching for the causes of disease and improved methods of treating patients. Accurate statistics and analysis of results obtained in treating various medical diseases enable us to determine the value of the treatment used and the factors influencing our results.

Only the physician is in a position to advise a woman about her physical condition and the safety or danger associated with pregnancy. The value of most methods of contraception used by women depends upon several factors, some of which can be determined only by careful examination. Therefore, every woman should be examined by a physician before pregnancy occurs. If pregnancy is contraindicated because of the patient's physical condition, her physician should advise her as to the most suitable method of contraception or refer her to a physician or clinic where she can obtain this advice.

Patients who wish to postpone pregnancy without medical indications should be advised that the child-bearing age is limited and that diseases of the heart, vascular system, and kidneys increase with age and frequently make pregnancy unsafe. One should also remember that tumors of the uterus and ovaries sometimes necessitate operations during the child-bearing age which prevent the occurrence of pregnancy later.

Ten per cent of American wives are childless, and many of these women are anxious for children. The Virginia League for Planned Parenthood and The Planned Parenthood Federation of America are vitally interested in this group of women who want children.

The purpose of the organizations interested in planned parenthood were summarized in a recent paper by Dr. N. J. Eastman, Professor of Obstetrics

*Read before the Medical Society of Virginia at its annual meeting in Roanoke, October 5-7, 1942.

at Johns Hopkins University. He stated, "Birth control means the regulation of conception in such a manner that the best interests both of the nation and of the individual family are served. Contrary to general opinion, the directing influence it would hope to exert is positive as well as negative. It is interested not only in contraception, but also in the encouragement of child-bearing among those who are suitable parents. The distressing problem presented by 10 per cent of American wives who are childless is very much its concern. On the negative side, let it be noted, it embraces not only those vaginal technics with which its name has been almost exclusively associated, but also such procedures as sterilization (tubal ligation) and therapeutic abortion."

In 1928 it became evident to a group of physicians in the out-patient clinic of the Medical College of Virginia that patients visiting the various clinics were often poor risks for pregnancy, or should be studied for a period of months before pregnancy should be attempted. The problem was discussed and finally it was decided to refer these women to the obstetrical department for examination and advice as to the best method of contraception for each patient.

In 1929 a group of patients had accumulated who came in regularly for contraceptive advice, some because of cardiac disease or hypertension, a large group with kidney disease, or a history of pregnancy and severe toxemia. Others came in because of tuberculosis, diabetes, and less frequent complications. All patients were examined carefully, and an honest attempt was made to individualize the treatment for each patient.

No funds were available in the college for the contraceptive clinic and at first it was financed by a gift from the Richmond Junior League and later by donations from interested individuals. Since the number of patients has increased, additional funds have been secured from The Richmond Maternal Welfare Association and The Virginia League for Planned Parenthood.

The maternal welfare clinic at the Medical College of Virginia is a part of the obstetrical clinic. An attempt is made in the hospital and home delivery service to have every obstetrical patient return to the postpartum clinic within six weeks after delivery. These patients are all examined by physicians in the clinic, and if the woman's physical condition is such that pregnancies should be spaced or avoided, she is advised as to the best method of contraception for her individual case.

The postpartum clinic where a record of the patient's condition during pregnancy, labor, and the puerperium is available is certainly the most suitable place for an accurate estimate of the advisability of future pregnancies. It is the author's opinion that any physician or clinic attending obstetrical patients fails to give complete maternity care unless the advisability of future pregnancies is considered and patients in whom pregnancy should be postponed or avoided are given advice as to the dangers of pregnancy and a suitable method of conception control.

In the postpartum clinic of the Medical College of Virginia during 1941, 120 patients were given foam powder and a sponge; and only three pregnancies have occurred in this group, 2.6 per cent failures. Sixty-eight patients were given a vaginal jelly and diaphragm; and three pregnancies have occurred in this group, 4.4 per cent failures. In another group 490 patients using Ortho vaginal jelly from one to ten months only two pregnancies have occurred, 0.4 per cent failures. This is an uncorrected rate of 1.18 per cent failures for 678 patients in one year.

Chemical and mechanical contraceptives have a definite place in preventive medicine when properly used in suitable cases.

For those patients with advanced cardio-vascular renal disease and other complications in whom pregnancy should be avoided permanently, sterilization by tubal ligation is probably the method of choice.

Reliable and conservative estimates indicate that one-fourth of all maternal deaths in child-bearing occur because the women are unfit subjects for pregnancy as a result of former pregnancies and acute and chronic disease processes.

Last year, 1941, we examined 1,025 women in the Maternal Welfare Clinic at the Medical College of Virginia. Seven hundred and four of these patients were new, and 321 were old patients who returned for further study. Four hundred and eleven of the new patients were considered as candidates for contraceptive advice and were given some type of contraceptive.

At the present time we are carrying out a study to determine which type of chemical contraceptive is most acceptable to the patient, effective in controlling

conception, and the comparative value of diaphragms and vaginal sponges in selected cases. This study was made possible by a grant from the Ortho Products Company, Inc., and a grant from The Planned Parenthood Federation of America, Inc.

Our results indicate that when the woman uses a contraceptive, most of them prefer a contraceptive jelly, and with a good contraceptive jelly 98 patients in every 100 can control their pregnancies. Other patients prefer a diaphragm and jelly, while another group has had good success with a vaginal sponge and jelly. Foam powder and a vaginal sponge has not been an acceptable method to most of our patients.

We think our clinic represents a healthy growth, the result of a need met by an interested lay group and interested members of the medical profession. The Richmond Chapter of the Virginia League for Planned Parenthood raises the necessary funds, and the physicians give their time to the clinic. Each patient is examined by a physician and then interviewed by a clinic nurse. The excellent work of the nurses is an essential part of any successful clinic.

The indications for birth control fall naturally into certain well defined groups.

Medical: Repeated toxemias of pregnancy increase both the maternal and infant mortality. Chesley at the Margaret Hague Maternity Hospital studied 466 women who had hypertension or other signs of toxemia in one pregnancy and were followed in a subsequent pregnancy. Twenty-three and one-tenth per cent of the subsequent pregnancies terminated in an abortion or still-birth. The risk to the mother depends upon the severity and duration of the toxemia. Some form of pregnancy toxemia is the most common cause of maternal deaths in Virginia and the second most common cause of maternal deaths in the United States.

Heart disease complicating pregnancy ranks fourth among the causes of maternal deaths in the United States and 7 per cent of the women who die in childbirth have heart disease.

Hamilton and Thompson have shown that the maternal death rate for favorable cardiac patients is 2.5 per cent, which is very little increase over the yearly death rate of 2.0 per cent for non-pregnant cardiacs of the same type.

The same authors state that the maternal death rate for severe cardiacs with auricular fibrillation is 33.3 per cent, more than four times the yearly death rate of 7.9 per cent for non-pregnant cardiacs of the same age and type.

Pulmonary Tuberculosis: Recent investigations indicate that patients with tuberculosis, if treated properly during pregnancy and for one year after delivery, show very little difference statistically from those patients with tuberculosis who do not become pregnant.

This statement does not cover the whole problem, because relatively few women with tuberculosis in Virginia can be treated with proper medical care, diet, and rest during pregnancy and for one year after delivery. A tuberculous mother should be separated from her baby for at least one year after delivery or until she is non-infectious, and she should have help for a much longer time.

An extreme illustration of this point is the Virginia family in which the father was diagnosed as having advanced tuberculosis, but refused hospital treatment. Eventually his wife had eleven children; ten of the children and the wife had tuberculosis. Ten members of this family were treated in sanatoria at state expense.

Contraceptive advice should be available to all tuberculous patients so that they may prevent conception when it is safe for them to attempt pregnancy.

Diabetes, multiparity, and too frequent pregnancies all increase maternal and fetal mortality.

Dr. Eastman has shown that at Johns Hopkins the maternal mortality varied between 3.55 and 3.78 per thousand deliveries through the fifth pregnancy. As the parity increased, the maternal mortality increased; and for the ninth and later pregnancies 11.73 women died per 1,000 live births, an increase of three times the death rate for women during the first three pregnancies.

In 1925 Woodbury made an exhaustive study of causative factors in infant mortality in several cities. This study showed that when the interval between pregnancies was three years, the infant mortality was 8.65 per 100 births. But when the interval between pregnancies was one year, the infant mortality was 14.67 per 100 births, almost twice as great.

It is well recognized that the modern physician not only treats patients who are ill, but he attempts to correct minor ills and advise a plan of living that will keep his patient well and happy.

Preventive medicine has made rapid progress in

many fields, and the reduction of maternal deaths in Virginia from 8 to 4 per cent in ten years is due largely to the improvement in medical care and the program of the Virginia State Health Department, which has established prenatal clinics in the smaller communities for pregnant women unable to pay for medical service. These clinics are staffed by local physicians who are assisted by the local health departments. As the clinics are all under supervision of physicians, I hope that any mother who needs contraceptive advice may ask for and obtain this advice in these clinics. Control of conception is certainly preventive medicine in many cases, and the obstetrical clinic is the logical place for this type of work.

The medical schools have recently awakened to their responsibility in doing research in contraceptives and teaching the indications for and the techniques of various contraceptive methods. The inclusion of regular lectures on contraceptives in the medical schools is an essential part of our educational program.

The interest of Virginia physicians in conception control was clearly shown in a report published in the VIRGINIA MEDICAL MONTHLY in March, 1935. Early in the same year a questionnaire was mailed to all members of our State Society, a total of 1,833 physicians. Four hundred of the questionnaires, or approximately one in four were returned with 86.5 per cent favorable to birth control. There were thirty-nine physicians specializing in obstetrics and gynecology who answered the questionnaire. Only one of the specialists was opposed to birth control under medical supervision, while 94.87 per cent were favorable to birth control.

The need is present. Let us, as physicians, meet it in a scientific and courageous manner.

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DISCUSSION

DR. W. R. PAYNE, Newport News: Dr. Ware has in a comprehensive manner given you a fine discussion of the work being done by the Virginia Society for Planned Parenthood. Too often that organization has been looked upon as one fostering the dissemination of various methods of contraception to women of all groups and classes. Dr. Ware's paper has demonstrated to you quite well that that is not the case and that actually contraceptive measures represent only one part of a large program which is fostering better prenatal and postnatal management.

There are certain women who are inadequate physically to withstand a pregnancy, even up to twenty-eight or twenty-nine weeks, when there is a possibility of getting a live baby. By being allowed to become pregnant their lives are undoubtedly shortened, and their attempt to have a living child is a failure. Until some concerted effort is made to education and control these cases our present high rate of maternal and fetal mortality will not be reduced. It is my opinion that education of the profession and of the laymen is the starting point.

More specifically, this program of education should emphasize the following points: First, every young couple contemplating marriage should have the advantage of physical examination before marriage and should have the findings discussed with them. We should emphasize to young people the importance of having babies early in their married life. Dr. Ware has pointed out the relative risk of pregnancy at different ages. A thorough physical examination should be done before any pregnancy, if possible. Many of us realize how impossible that often is. When having Wassermanns done before marriage these girls can have a chest examination and a pelvic examination; thus every newly married woman in the State can have the opportunity of being checked up before her first pregnancy, as Dr. Ware suggested. When our patients come back for the postpartum check-up there is a good opportunity to consider the advisability of having another child. If it is not safe she should be so advised, and she ought to be given the benefit of what we know about contraceptive measures, and not left to be ill-advised by friends or relatives.

We know that pregnancies occurring too close together carry with them a higher mortality and that mortality rises rapidly after the fourth.

I shall say very little about the various methods of contraception. We know there are some fairly reliable methods. In all of the cases requiring contraceptive advice we ought to decide whether this patient requires temporary measures for protection or whether she is a person who has a chronic disease, such as nephritis, T. B., or cardiac insufficiency, requiring permanent protection. In those cases I strongly advocate sterilization.

Sterilization is a rather simple procedure, done fol-

lowing a delivery, or as an interval operation. We think that doing this operation at about the third day, which has been advocated by Dr. Adair, of the Chicago Lying-in Hospital, is a very safe and simple procedure. It can usually be done under local anesthesia. It lengthens the hospital stay by about three days; and, so far as is surgically possible, it saves the patient the danger of future pregnancies and avoids the problem of using any mechanical devices.

I want to emphasize again that this is an important subject and should be a part of future programs. Every doctor who practices obstetrics should be in possession of these charts, which are obtainable by writing to the Department of Labor, at Washington.

PULMONARY DISEASES CAUSED BY DUST*

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Pneumoconiosis is the term used to describe all dust diseases of the lungs. Because of numerous law suits and the enactment of occupational disease laws in many states it has become a subject of ever increasing interest, not only to the medical profession, but also to industry, labor, insurance companies, and the legal profession.

It is not a recently discovered disease. We find that as early as the sixteenth century Agricola, a mining engineer, described dust conditions in dry mines and warned that dust "penetrates into the windpipe and eats away the lungs and implants consumption in the body". Later, in 1700, Ramazzini published a comprehensive volume dealing with occupational disease in practically all of the trades and professions known in his day. Of stone workers he says: "They oft times suck in by inspiration the sharp and rough cornered particles or splinters that fly off, so that they are usually troubled with a cough and some of them are asthmatic and consumptive." Modern industrial tools and processes which create very high concentrations of dust and the economic depression, which indirectly resulted in numerous law suits for silicosis, have caused us in recent years to focus attention on the subject.

There are as many kinds of pneumoconiosis as there are kinds of dust, and many of them have been named to indicate the type of dust responsible. Only two of these, silicosis and asbestosis, caused by inhalation of free silica and asbestos dusts respectively, are known to be clinically important and capable of causing disability. Other dusts, such as granite and pyrophyllite, have been suspected, but in each instance it has been shown that the free silica present caused the silicosis.

Gardner suggests that the lung changes caused by dusts which do not contain free silica be classified in a group known as "benign non-specific pneumoconiosis". Examples of this group are siderosis from iron dust, anthracosis from coal dust, and many others. Prolonged inhalation of these so-called inert dusts may result in exaggeration of the linear markings as visualized on an x-ray film, probably as a result of simple accumulation of dust along the lymphatics rather than of fibrosis. At any rate, it does not develop to a stage of clinical importance.

It appears, therefore, that only silicosis and asbestosis merit serious consideration, and of these silicosis is the more important because of the much larger number of workers exposed to silica dust.

Silicosis may be defined as abnormal fibrotic changes in the lungs caused by the inhalation of free silica. When we realize that silica, or quartz, is the most constant constituent of the rocks and minerals that go to make up the earth's crust, it is obvious that those occupations associated with mining of various types, mineral grinding, rock quarrying, stone cutting, tunnel driving, and the manufacture of brick and tile often expose workers to silica dust in harmful amounts. Exposures also occur in many industrial processes such as the manufacture of abrasive soap powder and in the foundry industry. Altogether, it has been estimated that approximately 500,000 persons in the United States are exposed to siliceous dust.

Ordinarily silicosis requires many years to develop. Even with very high dust concentrations serious disease seldom occurs in less than two years, and under conditions usually encountered it requires fifteen to thirty years.

Several known factors determine the harmfulness of a dust:

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1. Its chemical composition.
2. Its concentration in the atmosphere.
3. The size of the particles.
4. The length of exposure.

Other factors, such as pulmonary infection and individual susceptibility, may also play a part.

The importance of chemical composition has already been indicated. Free silica must be present, and, other factors being equal, the silicosis-producing power of a dust increases in proportion to the percentage of free silica it contains.

The concentration of dust particles in the atmosphere about the worker is important. Fortunately, nature has provided us with rather efficient barriers to the entrance of dust into the lungs. The hairs of the nose and the moist mucous membranes of the respiratory tract act as traps, and ciliary action tends to expel particles, so that a normal person may safely breathe low concentrations of harmful dusts for years without ill effects. However, these protective mechanisms are unable to cope with high concentrations for long.

Dust particles, in order to be respirable, must be very small. In fact, only those less than 10 microns in size are considered harmful, and the majority of those reaching the lungs are less than 3 microns. Particles of this size may be created in high concentrations in such operations as sand blasting, rock drilling, stone cutting with pneumatic tools, and fine grinding of minerals; and they remain suspended in the atmosphere for long periods.

The essential feature of silicosis is the production of fibrous tissue. Inhaled dust particles are picked up by phagocytes in the alveoli and taken into the lymphatics which drain toward the hilum. Some are trapped in the small lymphoid deposits along the vessels and bronchi and others reach the tracheobronchial glands. Silica seems to have a poisonous effect on the phagocytes, causing them to die, and wherever these dead phagocytes accumulate along the lymphatics the silica stimulates the formation of fibrous tissue in the form of concentric whorls known as silicotic nodules. Eventually, if the dust exposure is heavy, there is partial blockage of the lymphatics. Some of the wandering cells enter the parenchyma and cause the formation of nodules there also. Then we have the typical picture of simple silicosis, namely, numerous discrete nodules, symmetrically distributed through both lungs. Fortunately, most cases come under this classification.

There is, however, a second type known as massive conglomerate silicosis. Here we may have massive conglomerate shadows occurring bilaterally and usually on a background of nodulation. As a rule these cases show marked emphysema. The etiology here is not clear, but Gardner states that in about 60 per cent of autopsies in this group he has been able to find evidence of tuberculosis. He feels that, in these cases at least, the massive type of lesion is probably accounted for by the combination of silicosis and tuberculosis. For the remaining 40 per cent he has no satisfactory explanation. In my own experience I have gained the impression that massive lesions occur most frequently among those workers exposed to high concentrations of dust having a high free silica content.

A third group of silicotics comprises those with pulmonary infection. Silicosis seems to favor the development of tuberculosis, which is by far the most frequent and serious complicating infection. Its appearance may range from small coalescing shadows on a background of simple nodulation to massive shadows involving the greater part of both lungs. Usually the development of such lesions is very gradual.

The discrete nodulation of simple silicosis does not cause symptoms, and, therefore, is usually discovered in routine industrial surveys. The massive type with the emphysema that usually accompanies it may cause disabling dyspnea and cough, but it is not unusual to see workers with such lesions carrying on their usual occupations with only mild symptoms. The third type, silicosis with infection, comprises only a small percentage of the total number of cases of silicosis; but it is the most important, because most of the disability and deaths occur in this group. The course of tuberculosis, the most frequent infection complicating silicosis, is usually chronic, and patients do not exhibit the toxic symptoms that ordinarily accompany uncomplicated tuberculosis. Quite often the only complaints are dyspnea and cough, resulting in a decreased capacity for work. Weakness, loss of weight, and fever are frequent late symptoms.

The diagnosis of silicosis requires, first of all, a history of adequate exposure to silica dust and, secondly, a characteristic x-ray pattern. Both must be present. Physical examination is of little value.

Besides silicosis, the other important type of pneumoconiosis is asbestosis, caused by prolonged inhalation of asbestos dust. It is of especial interest in North Carolina because we have approximately 500 persons in the asbestos industry, many of whom have been found to be affected. Asbestos is a fibrous mineral, magnesium silicate, which can be spun and woven into cloth, tape, brake bands, and other woven products or ground and used in paints and paper. It does not contain free silica. Inhalation of this dust over a period of years produces a different type of pathology from that of silicosis. According to Gardner, the dust particles are deposited mainly on the walls of the terminal bronchioles, where they stimulate formation of a fibrous cuff. As this contracts, it narrows the lumen and finally prevents air from penetrating into portions of the lung supplied by the bronchiole in question. This eventually results in both atelectasis and emphysema. The x-ray appearance of asbestosis is rather characteristic. Over the middle and lower portions of the lung there is a ground glass appearance, tending finally to obliterate the linear markings. In advanced stages the heart outline often becomes shaggy in appearance and the excursion of the diaphragm limited. Nodulation and conglomerate areas which frequently occur in silicosis are not seen in asbestosis. Also, there is no evidence to indicate that asbestosis influences the development or course of tuberculosis in any way. The most distressing symptoms are dyspnea and a rather non-productive cough, and these are usually much more marked than would be expected from the x-ray findings. The average length of exposure required for the development of asbestosis is less than for silicosis. The diagnosis requires a history of adequate exposure and a characteristic x-ray pattern.

The solution of the silicosis and asbestosis problem lies in prevention, because neither disease can be cured. It is chiefly an engineering problem and requires the control of harmful dust by various measures, such as exhaust ventilation, wet methods, isolation of dusty operations, good housekeeping, substitution of materials, and the use of approved respirators. Medical examinations both before and during employment are desirable to weed out those workers who have tuberculosis or other serious lung conditions which may increase their susceptibility to the effects of dust and all those who have developed silicosis or asbestosis to a degree which makes it dangerous for them to continue in a dusty atmosphere. In North Carolina such a program has been under way since 1935, when the General Assembly passed the Occupational Disease Act, which made silicosis, asbestosis, and 23 other occupational diseases and conditions compensable and required both pre-employment and routine medical and x-ray examinations of workers exposed to siliceous dust. Approximately 17,000 such examinations and re-examinations have been made to date, including the workers in practically all dusty operations in the state employing more than five people. The results of these examinations have made it possible to spot the dangerous jobs, so that now industrial hygiene engineers and industry can work out suitable control measures. It is reasonable to assume that the continuation of such a program will eventually make asbestosis and silicosis very rare diseases.

HYPERTENSIVE ARTERIAL DISEASE*

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Hypertensive arterial disease is one of that group of disease conditions which have inevitably become more numerous with the prolongation of the life-period. There's nothing strange about the fact that as more persons escape death in childhood more persons arrive at the time of life at which hypertensive arterial disease is prone to develop. Each case is potentially one of heart enlargement and failure, unless some vascular catastrophe intervenes. It is estimated that twice as many of our people die of hypertensive arterial disease as of cancer. A keen observer[1] gives hypertensive heart disease—a sequela of arterial disease—first place in the list of important types of heart disease, and estimates that, in the Southern States, the hypertensive form makes up from 40 to 60 per cent of all heart disease.

Many workers, clinical and laboratory, are now engaged with this problem. A number of cases of

*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

hypertension due to unilateral renal disease amenable to surgical cure have been reported. Several studies have been made on the incidence of hypertension in children and adolescents. Instead of the pessimism of other years, confidence and enthusiasm are felt by those seeking to advance our knowledge of this baffling disease.

Generally speaking, hypertensive arterial disease does not follow one cause or one kind of injury to the arterial system, but a combination of causes and superimposed injuries. The period of alcoholism, the instance of infection or pregnancy, or the bout of nephritis may be far in the past. Any one of these alleged causes of a certain case of arterial tension may have long ceased to exist, while the resulting disease process continues inexorably on its destructive course. An apparent multiplicity of factors and marked chronicity of the process, therefore, make it difficult to determine, at this stage of investigation, the time of onset and cause of the great majority of cases of hypertensive arterial disease.

Likewise, the structural changes found in a case of hypertension may be complex and widespread, particularly within the walls of the small arteries and arterioles. The spirally arranged small muscle fibres of these little arterial ducts are under direct control of the sympathetic nervous system, and have a tonus or tension which is necessary for normal blood flow. In health, the resistance of these arteries plus the inertia of the blood on the one hand, and the propulsive force of the heart on the other, are in a state of delicate balance. Increase in the resistance to the blood flow necessitates an increase in the propulsive force of the heart to maintain the state of balance. Renal ischemia may act through the sympathetic system to produce a temporary hypertonia of the small vessels and repetitions of this sequence of events tend to cause thickening of the walls of the small arteries and arterioles. In cases in which this hypertonia becomes constant it would seem that the progressive and persistent changes of arterial disease, replacement of elastic muscle tissue of their walls by inelastic collagenic connective tissue, are inescapable.

The structural changes going on over varying lengths of time give rise to permanent elevation of systemic blood pressure. A pathologic state of hypertension exists in many cases in which no such arterial changes are to be found, and these cases, for want of a better term, we label idiopathic or essential hypertension.

It is generally said that foci of infection, maladjustment of the dietary, fatigue, alcoholism, endocrine dysfunction, metal poisonings, hereditary predisposition, renal ischemia and various renal lesions are important factors in the causation of hypertensive arterial disease. Except for renal disease, little evidence has been adduced to incriminate any of these alleged factors. Nevertheless, any one of them present in a given case is generally regarded as a satisfactory explanation of the hypertension. Many experiments on the kidneys of laboratory animals have elevated the blood pressure; and nephrectomy has been performed in a considerable number of cases of unilateral kidney disease in man, with resultant lowering of the elevated blood pressure. However, widely divergent views are held as to the renal origin of hypertensive vascular disease.

Omitting, therefore, any discussion of the factors generally accepted as causes, I shall examine, at this point, the divergent views as to the renal origin. Dr. Richard Bright,[2] more than a hundred years ago, suggested that the "altered quality of the blood" affected the minute and capillary circulation, so as to render greater action necessary to force the blood through the distant subdivisions of the vascular system. This, he thought explained the left ventricular hypertrophy; and he fixed on the kidneys the responsibility for this altered quality of the blood. After more than a century of speculation and investigation we are still far from agreed on the subject. An opposite view and one now held by many is that "essential hypertension is merely a collective concept for a number of conditions, having in common the positive characteristic of hypertension, and the negative one of—absence of renal disease."[3]

In support of this theory are the facts that in many instances the blood pressure is elevated for years before there is any evident impairment of renal function, and that a very large number of patients with essential hypertension, after many years die of heart failure or a cerebral accident, having never shown evidence of renal insufficiency. Still many have adhered to Bright's conception that renal disease causes hypertension and hypertensive arterial disease. And his theory has given direction to most experimentation and influenced most observations.

Arteriolar disease of the kidney had been observed in cases of essential hypertension, and the possible functional effects of arteriolar sclerosis in causing progressive renal ischemia had been speculated upon for some time. It was along these lines that Goldblatt[4] and his associates began their investigations in 1928, which aroused fresh interest in renal hypertension. Unable to constrict the million afferent glomerular arterioles of the laboratory animal's kidney, as does arteriolar nephrosclerosis those of the human kidney, he constricted the main renal artery by means of a clamp so designed that any degree of narrowing up to complete occlusion of the vessel could be produced. With such a clamp, he constricted the renal artery of one kidney, in both the dog and monkey, and produced an elevation of the systolic and diastolic blood pressure which lasted for weeks. On loosening the clamp, or removing the kidney, the blood pressure was found to return to normal. Likewise, by clamping off both the renal arteries of the dog and the monkey he produced persistent hypertension, the counterpart of malignant hypertension in man. He showed that hypertension with uremia could be produced in a dog already having hypertension due to clamping off one renal artery, by clamping off the other artery also. Of particular interest was the occurrence of hypertension, *with and without* renal excretory insufficiency. Yet, the elevation of blood pressure in both of his experiments was clearly of renal origin.

Supplementing the experiments of Goldblatt, severe hypertension has been brought about in animals as a result of perinephritis produced by wrapping the kidney in cellophane or silk. A thick fibrocollagenous constricting hull forms around the parenchyma, but not the pedicle.[5] The renal ischemia thus produced is followed by a rise in the systolic and diastolic blood pressures. Removal of the diseased kidney, or of the hull around the kidney, abolished the hypertension.

The clinical counterparts of the animal experiments have been found in man, confirming almost every important point learned about renal hypertension in the animals. Well-authenticated cases have been reported, in which embolization of one or both renal arteries has produced a pronounced rise in arterial pressure. A case has been reported[6] of a student, aged 16, who was found to have a blood pressure of 154/102. Inquiry revealed that at the age of six he had been struck over the right kidney. It was said that the urine remained normal. At operation a large cyst was found about the kidney containing 800 c.c. of chocolate-colored blood. The cyst and the kidney were removed. After nephrectomy, the blood pressure promptly returned to normal. Dr. Frederick Palmer and the late Dr. Soma Weiss[7] concluded that the association of hypertension pyelonephritis is more than accidental. Barker and Walters[8] have reported in some detail five cases of unilateral chronic atrophic pyelonephritis along with hypertension in which prompt relief was afforded by the removal of the diseased kidney. Freeman and Hartley, of Chicago, have reported[9] the case of a man, aged 37, suffering an injury to one kidney, making its removal necessary. The blood pressure remained within normal limits for 16 months after nephrectomy, when hypertension and uremia both were found to exist. His blood pressure rose before death to 290/170. An autopsy revealed ischemia of the kidney due to an athermatous particle occluding the renal artery.

Reports have come from various clinics of relief of hypertension by removal of a diseased kidney, of numerous such successful operations on children. It seems, therefore, certain that renal disease is a definite cause of hypertension in certain cases. Whether it solves the problem in more than a small fraction of the cases remains for further investigation.

It is known from life insurance statistics that increase in the incidence of hypertension takes place in both sexes after forty years of age; and that the incidence continues to increase with advancing age. The pre-hypertensive state in children and adolescents is receiving much more study than heretofore. At Rochester,[10] in 1937, an examination of the blood pressure reactions from placing the hand in ice water made on 400 school children of 6 to 19 years disclosed that 18 per cent of the children, some of 6 years, hyper-reacted as to systolic and diastolic pressures. Ten of the group gave a very high maximal response to the test. The highest response was 190/130, the lowest 170/110. There was no evidence of nephritis or organic heart disease in any of these children. A similar study of 1,500 adults, among whom were those who had a temporary rise in blood pressure ten or twenty years previously, was made by the same investigator[11] in 1940. A considerable percentage of the hyper-reactors now had

fully developed hypertension; while the normal blood pressures of ten and twenty years before had remained normal.

I believe this pre-hypertensive state is far more common among young college men and women than is generally realized. Alvarez[12] reported an incidence of 22 per cent of mild hypertension in 6,000 freshmen. These had a systolic pressure exceeding 140, while 45 per cent of the group had a pressure exceding 130.

Palmer,[13] of Boston, in a study of the records of 3,500 routine physical examinations at Harvard, found a systolic pressure of more than 140 in 10 per cent and more than 150 in 2 per cent. After ten years, he obtained data on 49 of the persons with elevated blood pressure, and found that 22.5 per cent of the group had hypertension; while in 66 without elevated blood pressure ten years before, only 4.5 per cent had blood pressure of more than 140. His conclusion was that, "if hypertension is found at twenty years of age, it is somewhat more likely to be found persistent after ten years than it is to develop *de novo* during this interval."

In an analysis of 200 selectees, 140 white and 60 colored, I found two white and two colored, all under 30 years, with hypertensive arterial disease sufficiently advanced to give symptoms and to disqualify for any form of military service. This is only 2 per cent of a small but typical cross-section of the population. During the past two years, a routine blood pressure reading taken on 200 college and high school students revealed two to have blood pressures of 170/100; and twenty with blood pressures of over 140/90.

During the past year, I have treated three children with acute glomerular nephritis whose blood pressures, in the acute stages of the disease, ranged as high as 160/100. The blood pressures of the three returned to normal after the infection subsided. The renal origin of hypertension in cases of glomerular nephritis is generally conceded.

A study of the frequency of hypertension in the young may contribute much toward an understanding of its etiology and treatment. We would do well to study the hereditary background of every case of hypertension in children and adolescents. It may be that the psychiatrists can contribute much to guiding and directing the emotional life of some of these patients. It is obvious that the young ought not to be alarmed about their blood pressure. There is more than one way of taking blood pressures. I do the job as casually as possible and do not inform the patient what the reading is, unless some other physician has done so. I have concluded that a carefully checked blood pressure reading at intervals is as important in a routine examination as the urine and Wassermann tests.

The crippling effect of hypertensive arterial disease on the older groups constitutes as much of a problem as does cancer. A study made at the Massachusetts General Hospital of the underlying causes and precipitating factors in 1,000 cases of congestive heart failure, resulted in nearly 50 per cent of the cases being ascribed to hypertension.

I have undertaken to determine the part that hypertensive arterial disease played in the deaths of 82 cardiac patients of my own in the last ten years. Thirty-seven of these were colored, 45 white. Twenty-one of the colored were females, 16 males. The underlying cause of the cardiac death in 21 cases was hypertensive arterial disease. Six of the 21 had malignant hypertension, with blood pressures ranging from 220 to 260/120 to 170. Five of the six died suddenly with apoplexy, and one of a profuse pulmonary hemorrhage. The average age of these six was 56. Four, three males and one female, died of hypertensive arterial disease complicated by coronary-artery disease. In eleven cases, in which hypertension was the chief factor in producing myocardial failure, death followed several years of invalidism—brought on either by an apoplectic stroke or by congestive heart disease. The average age of these eleven was 56 years. The average of the other 16—in which hypertension was *not* a factor—was 63 years. Nephritis was a factor in six of the hypertensive cases, syphilis in three.

Eighteen females and 25 males total up the 43 deaths of whites. Of these, hypertensive arterial disease was the chief cause in the deaths of six females and six males. Two of these, aged 45 and 48 respectively, had malignant hypertension with blood pressures of upwards of 270/170, and died suddenly of apoplexy. Four died of cerebral hemorrhage in the course of a few months. Two died suddenly of coronary occlusion, while four others died of congestive failure due to hypertension. The average age of these 12 was 59 years; of the other 31 in which hypertension could *not* be said to be a factor in causing death, 72 years. Nephritis was a known factor in three of the hypertensive cases.

Syphilis was *not* a factor in any case.

I have grouped for the purpose of study 101 cases of hypertensive arterial disease with hypertension—with a single exception, all over 40 years of age. I have examined and taken the blood pressure of every patient several times. I have examined and prescribed for the most of them at intervals over a period of several years. The blood pressure ranges have been from 170 to 280/100 to 150.

There are 65 white and 36 colored. The age groups are as follows: one, 30-40; 15, 40-50; 28, 50-60; 38, 60-70; 14, 70-80; and five over 80. Twelve of these have had at least one bout of congestive failure requiring morphine and digitalis. Twenty-four have been put on a regimen of unrestricted exercise and diet. Percussion has indicated cardiac hypertrophy in more than 50 per cent, and the point of maximum impulse was displaced in each of these cases. It has not been practicable to confirm the physical findings of heart enlargement by an x-ray examination.

It is realized that an electrocardiogram is not of the first importance in diagnosing cardiac changes due to hypertension. However, I made electrographic tracings on 40 cases. Twenty of these revealed from light to conspicuous left axis-deviation, confirming the physical findings of hypertrophy in those cases. None showed right axis-deviation. One case showed left bundle-branch block, and one intra-ventricular block. No evidence of fibrillation was found in any of the grams. Three cases of acute coronary occlusion, two anterior and one posterior, were found in three cases under treatment.

I have used the generally accepted therapies—bromides, phenobarbital and nembutal; the various nitrites; iodides and theobromine; and sodium thiocyanate, in the form of the elixir of sodium sulfocyanate. In addition, were advised—rest, relaxation, vacations, weight reduction for the obese, a low-protein diet, vitamins and nicotinic acid. By far the best results have followed the administration of thiocyanate. The results from the more commonly used medications were unsatisfactory.

I have not recommended splanchnic nerve section nor vascular implantation to the kidney in any case. A series[14] of these operations have been done, and enthusiastically reported. These procedures, however, appear to be in the experimental state. Several experiments[15] have been made with renal extracts, both in animals and man, to reduce hypertension. These are also in the experimental stage and I have not used them.

Many studies[16-17-18] have been made in the treatment of hypertension with thiocyanate and generally good results have been reported. The dose recommended is not more than 5 grains a day. It is also recommended that the blood concentration should be from 8 to 12 mgs. per 100 c.c., and that frequently tests should be made that it may not exceed 12 mgs. It is urged that medication be stopped immediately if weakness, nausea, dizziness, or diarrhea appear.

I have given the elixir of sodium sulfocyanate in the recommended dose to 16 in the series of 100 cases of hypertensive arterial disease. Blood concentrations varied from 2 to 18 mgs. per 100 c.c. The results were good in 11 cases. Both the systolic and diastolic pressures were appreciably lowered in these cases, and the patients reported marked improvement in their sense of well-being. Three patients reported no improvement, and their blood pressures were not lowered. Toxic reactions occurred in two instances, in one case as a gastric upset with anorexia and nausea, and the drug was discontinued; in the other as a severe chill, followed by a high spiking temperature and erythematous rash all over the body, twenty-four hours after a venapuncture. The blood concentration was 6 mgs. per 100 c.c. in this case. It was feared that a streptococcic septicemia was contracted from the venapuncture; accordingly, maximum doses of sulfanilamide were given daily. In the meantime, a blood culture and daily blood and urine examinations were made. The patient was ill for ten days. The culture was negative for any blood-stream infection. Also the non-protein nitrogen of the blood was normal, and the red and white cell counts near normal notwithstanding the high temperature over so many days and the large and continuous doses of sulfanilamide. As far as I know, no similar reaction has been reported. This case further emphasizes the need of caution in giving this drug.

Two typical cases are described in brief outline:

A white woman, aged 48, with the usual symptoms of hypertension, had visited several clinics and had been told she had malignant hypertension. The blood pressure reading, on her initial visit the early part of 1942, was 250/120, and she was put on the regular dose of elixir of sodium sulfocyanate. Except for a few weeks, when a mild gastric upset ap-

peared, she had taken the drug daily, and has reported a steady improvement in well-being. She is now free of symptoms, drives her car and travels at will. There has been a consistent fall in blood pressure and on her last visit to my office it was 178/90.

A white farmer had dyspnea, vertigo and headache in varying degrees for several years, for which he had not sought medical advice. A mild attack of pulmonary edema in January, 1942, necessitated medical treatment. When first examined, the blood pressure was 220/120. Given the elixir of sodium sulfocyanate, the blood concentration reached 18 mgs. per 100 c.c. However, no toxic reactions appeared and a general improvement in well-being has been reported, while the blood pressure readings have steadily dropped. The blood pressure on his last visit to my office was 170/100.

This is not a large number of cases, and we all know that many factors make blood pressure go up and down. However, the response to thiocyanate in the eleven cases has been so good that the result is believed to be more than coincidental. However, it must be recognized that it is not likely that any treatment will effect a reversal of the hypertensive arterial disease, which, it seems, precedes the devolopment of hypertension. This being the case, treatment must be preventive, and of the young. Palliation is the best that can be done for the middle-aged and old. For the time being, I believe the thiocyanate is the drug of choice and reasonably safe if the medication is carefully supervised.

SUMMARY

Hypertensive arterial disease, occurring as it does in all age groups and particularly in those past forty, merits our best study. Its etiology is complex, and the anatomic changes within the arterioles responsible for hypertension take place slowly over varying lengths of time. Although many animal experiments have been done, and their counterparts seen in man—demonstrating renal disease to be a definite cause of hypertensive arterial disease—many do not accept renal morbidity as an etiological factor.

A study of the incidence of hypertension, or hypertensive arterial disease, reveals it to be present to a considerable degree among adolescents, and occasionally pre-hypertensive is demonstrable in young children.

In a study of 82 cardiac deaths, hypertensive arterial disease was found to be the underlying cause of myocardial failure in more than 40 per cent of the cases.

A hundred cases of hypertensive arterial disease now under treatment are analyzed with reference to bouts of heart failure, cardiac hypertrophy and electrocardiographic changes.

The conservative method of treatment with sedatives, nitrites and iodides was followed with varying and, for the most part, unsatisfactory results in all but 16 of the series of cases. In these cases elixir of sodium sulfocyanate was given, and an excellent response as to well-being and lowered blood pressures resulted in eleven cases. No apparent improvement took place in three cases, and toxic reactions resulted in two cases, necessitating withdrawal of the drug.

Two cases are presented in brief outline.

Thiocyanate therapy appears to be the treatment of choice in hypertensive arterial disease. Its administration needs careful supervision. It is recognized, however, that a reversal of the process of thickening of the arterioles is unlikely. Treatment must, therefore, be preventive when possible and palliative after the disease has manifested itself.

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DISCUSSION

DR. J. M. HUTCHESON, Richmond: As Dr. Copley has indicated, interest of a scientific nature in hypertension has concerned itself chiefly with etiology. And, as that problem has not been settled, it is to be expected that wide diversity of opinion should exist as to treatment.

For more than a century the relationship of hypertension to renal disease has been a central point of discussion. Bright believed the cardiac hypertrophy and arterial changes found at autopsy to be due to increased resistance to peripheral blood flow caused by disease of the kidney. Some forty years later, Gull and Sutton, finding that so many hypertensive patients died of cardiac or cerebral disease and failed to show significant changes in the kidneys, concluded that sclerosis of the arteries is the primary factor. Still later, Allbutt and others, emphasizing the fact that hypertension precedes vascular changes, persuaded a large following that vaso-constriction is the initial event, to be followed later by sclerosis. As the sphygmomanometer came into general use and as facilities for determining renal function were at hand to show that, even with severe hypertension, kidney function may be normal, Allbutt's view was generally accepted and prevailed up to a few years ago. Following the work of Goldblatt and others on experimental hypertension, the kidney has again come into prominence. Today it is widely held that hypertension begins with sclerosis of renal arterioles and arteries and that renal ischemia thus produced causes the kidney to elaborate a substance which, when activated in the blood, brings about vaso-constriction. Thus the views previously mentioned are in a measure correlated. Whether this is the final explanation of hypertension or not cannot as yet be stated, but it is certain that the work of recent years has added immeasurably to our knowledge of the condition.

As to treatment, I am convinced that more can be accomplished by trying to help the patient live with his hypertension than by attempting to correct it. In the first place, I doubt the wisdom of reducing the pressure in all cases, even if it can be accomplished. Nor has it been my experience, as so many have implied, that unpleasant symptoms increase or diminish with the level of the pressure. On the contrary, many patients feel better as the pressure goes up and worse as it comes down. Much harm may be done by taking a patient's blood pressure and informing him, either directly or by implication, that unless his pressure is reduced he is headed for disaster or that any unusual effort may cause apoplexy. To say the right thing to patients is the art of medicine and no general rules can be laid down, but it is my belief that the less said about the height of the pressure the better. Sedatives like phenobarbital or chloral hydrate help the patient, though they probably do not affect his pressure. I have had no personal experience with thiocyanates, though I have seen patients taking the drug prescribed by others with variable success. Articles in the recent literature suggest that thiocyanate therapy is gaining in popularity, though the toxic effects deter many from even trying it.

What has been said is believed to apply to the great majority of cases of hypertension. There are exceptions, as in the rare instances of hypertension caused by unilateral renal disease. Sympathectomy, of one of the various types, may be of some use, but it is hardly conceivable that so radical a procedure should be applicable in more than a small number of cases. While differences of opinion as to treatment of hypertension are inevitable, it is my belief that in our present state of knowledge we could improve our effectiveness by devoting more attention to the patient himself and less to the height of his blood pressure.

DR. CLAUDE C. COLEMAN, Richmond: Dr. Copley has made sufficient reference to the surgical treatment of hypertension to justify my attempting some further discussion of this type of treatment. Dr. Hutcheson, who led

the discussion, made some reference to surgical treatment but he did not appear to favor it. I have great respect for Dr. Hutcheson's medical knowledge and judgment, based on observation of his work for many years. However, the attitude toward surgical treatment of intractable hypertension is very favorable in many medical centers, particularly those of Boston and the University of Michigan. I understand that operation in proper cases is enthusiastically advocated by the internists as well as the surgeons in these centers.

I, myself, have done splanchnicectomy with excellent results in some cases. In none of the cases referred to me for splanchnicectomy had any form of medical treatment shown any beneficial effect upon the condition. I have heard of no medical treatment which offers the patient with essential hypertension any particular relief, nor any single treatment upon which medical men agree as being helpful. I believe that surgery for this condition, which is often steadily progressive, offers the patient the only hope in many cases. This is particularly true of young people who maintain a high blood pressure level. In such cases it would seem important to lower the blood pressure by splanchnicectomy before destructive changes have taken place in important organs.

DR. COPLEY, closing the discussion: The opinions of Drs. Hutcheson and Coleman have always commanded my utmost respect, and I appreciate immensely their discussions of my paper. As teachers, both inspired me when a student and an intern. I remember well how they challenged by diagnosis and treatment of cases. A ward round with either one was a stimulating occasion, and always sent me hurrying to the library to find support in the literature for my mutilated contention in some particular case. I am very happy they have treated me so kindly on this occasion and have not annihilated all my conclusions.

I agree with Dr. Hutcheson the patient needs treatment, but differ with him and believe his hypertension needs treatment also. Each patient needs general treatment, no matter what his disease. The varied therapy from psychology to garlic is likewise striking evidence that treatment of hypertensive arterial disease has been unsatisfactory. It is also true the solution of the problem that will apply even to a majority of cases does not appear in sight. However, as I tried to point out, some of the conservative internists in various clinics believe sulfocyanate therapy to be of definite value in many cases. While my series is small, the results are in line with those of other investigators, and I think justify further trial. I am continuing the therapy and hope at a later time I shall have a much larger series of cases to report. As Dr. Hutcheson states, the toxic effect of sulfocyanate in some cases deters many from using it. The fact that toxic reactions do occur is its chief objection. The drug should be administered, therefore, with the greatest care and blood concentration tests should be frequently made. I also think harm results from making patients blood pressure conscious. On the other hand, I still believe a careful blood pressure reading one of the most important parts of a physical examination.

Dr. Coleman is correct in saying some of the internists and surgeons enthusiastically recommend splanchnicectomy. De Takats and his associates, of Chicago, think this the best method and are of the opinion of Dr. Coleman that surgery offers the patient the only hope in many cases. I also understand the operation has been successfully performed at the University of Michigan. As a rule, however, I do not think the internists of Boston are very enthusiastic over anything. I have taken courses at the Massachusetts General Hospital during the past few years, and that was my impression of them. While mention was made of the operation, I did not happen to contact those committed to it. Dr. Coleman's recommendation, however, unquestionably increases my confidence in this method, so that now I would not hesitate to suggest it.

INTRA-GROUP INCOMPATIBILITIES IN WHOLE BLOOD TRANSFUSIONS*

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Hemolytic transfusion reactions are becoming increasingly noticeable since the use of whole blood transfusions for therapeutic purposes has reached such large scale proportions. The majority of these reactions are probably due to: (a) *inter-* group errors in typing, (b) allergies, (c) foreign matter derived from the apparatus, (d) incipient coagulative changes. However, an appreciable number of these reactions are caused by *intra-* group incompatibilities. Investigations, particularly by Wiener,[1-5] of the reasons for the discrepancies existing in bloods of the same group have revealed that the antigenic structure of human blood cells and serum is much more complex than has been realized.

The purpose of this investigation was to attempt to determine whether or not the present methods of *intra-* group diagnosis are adaptable to routine use in the University Hospital Blood Bank.‡ Since

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‡The author wishes to express his appreciation to Mrs. Edwin Shearburn of the University Hospital Blood Bank for her cooperation in making this study possible.

methods of subtyping and subgrouping are based on recent immunologic findings, the new constituents of whole blood are discussed in some detail. The present conception of the antigenic structure of human blood is presented in Table I.

SUBGROUPING

I. *Immunologic Considerations:*

Table I shows that Group A has been divided into subgroups A_1, A_2, and A_3, and similarly Group AB has been subgrouped into A_1B, A_2B, and A_3B.[2] Iso-agglutinins may occasionally be present in the sera of these subgroups, so that bloods with the following antigenic formula may be encountered: $A_1\beta a_2$, A_1Ba_2, $A_2\beta a_1$, A_2Ba_1, A_3a_1. Although A_1 and A_1B occur more frequently than A_2 and A_2B, iso-agglutinin a_1 is much more frequent than a_2. Since subgroups A_3 and A_3B are found rarely and merit further study, they will be disregarded in the present discussion.

II. *Role in Transfusion Reactions.*

Fortunately the irregular iso-agglutinins a_1 and a_2 either are entirely lacking in the majority of Groups A and AB, or are present in low titer. Nevertheless, it is necessary to remember that these iso-agglutinins may be evoked or augmented by iso-immunization, particularly in patients receiving multiple transfusions. For example, Wiener[2] has discovered transfusion reactions which have occurred in persons of subgroup A_2 who have received transfusions with A_1 bloods. The titer of the a_1 iso-agglutinin in these recipients was elevated sufficiently so that subsequent transfusions of A_1 blood caused a hemolytic reaction. Only one case of a critical rise in the titer of a_2 has been reported.[6] One patient

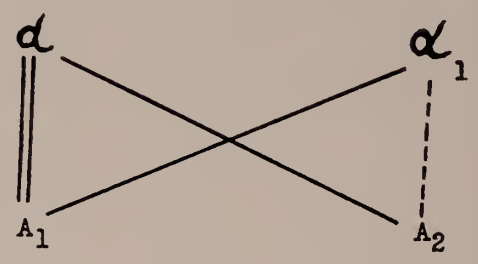

Fig. 1. The affinity of iso-agglutinins of B sera for iso-agglutinogens of cells of subgroups A_1 and A_2.
═══ indicates strong affinity;
——— moderate affinity;
----- weak affinity.

in the University Hospital of subgroup A_1 had received multiple transfusions and suffered a transfusion reaction. The sera of this patient contained an irregular iso-agglutinin which was detectable at 4°C. This agglutinin clumped cells of Group 0 and A_2. The patient was Rh positive. The properties of this irregular iso-agglutinin are peculiar to iso-agglutinin a_2.

In summary, transfusion reactions due to the incompatibility of sub-groups are uncommon for the following reasons:

(a) The majority of the bloods of groups A and

TABLE I
ANTIGENIC STRUCTURE OF HUMAN BLOOD
SUB GROUPS*

Agglutinogens	O	A_1	A_2	A_3	B	A_1B	A_2B	A_3B
Frequency %	41.5	35.6	10.8	0.1	8.2	2.6	1.3	0.1
Agglutinins	$a\beta$	$\beta(a_2)$‡	$\beta(a_1)$	$\beta(a_1)$	a, a_1	(a_2)	(a_1)	?
Frequency %	100	(a_2) rare	(a_1) low	(a_1) rare	(a_1) 72	low	33	?

*Data of Wellisch and Thomsen.
‡Irregular iso-agglutinins are in parenthesis.

SUB TYPES

Agglutinogens	M	N	MN	Rh+	Rh—	Hr+	Hr—	P
Frequency %	30	20	50	87	13	?	?	0.1
Agglutinins	anti-M	anti-N	anti-MN	anti-Rh	anti-Rh	anti-Hr	anti-Hr	anti-P
Frequency	3 cases	0	0	0	*	0	?	2 cases

*Potential anti-Rh

AB do not contain these irregular iso-agglutinins.

(b) These irregular iso-agglutinins are usually very weak.

(c) The distribution of the subgroups (Table I) lessens the probability of subgrouping incompatibility in primary transfusions.

At the present time our Blood Bank is equipped to perform subgroupings when *intra-* group incompatibility is encountered. It should be mentioned that only potent B sera is used for grouping. Hooker[7] states that the commonest error in grouping is the failure to recognize persons of subgroups A_2 and A_2B because of the low agglutinability of A_2 cells; thus these groups might be interpreted as 0 and B, respectively, if weak group B sera were used.

III. *Method of Subgrouping.*

Approximately 72 per cent of the sera of Group B possess an α_1 iso-agglutinin in addition to the common α iso-agglutinin. The relative avidities of these iso-agglutinins for agglutinogens A_1 and A_2 as described by Friedenreich[8] are shown in figure 1. Absorption of suitable group B sera with A_2 cells removes the α iso-agglutinin, leaving α_1, which has very little affinity for A_2 cells. Cells which are agglutinated by the absorbed sera are A_1 cells; cells not agglutinating are A_2 cells (rarely A_3).

The routine open-slide procedure for typing blood is used. One drop of a standard cell suspension (2 per cent) is mixed with one large drop of absorbed B sera on a slide and rotated for 5 minutes. The agglutination is read macroscopically.

Absorbed B sera for the detection of subgroups can be obtained from commercial blood donor agencies; however, it can be easily prepared with a little practice.[9] Table II illustrates a typical protocol of our preparation of subgrouping sera. Group B serum was absorbed with ⅛ volume of packed cells from ten different persons of Group A. Cells No. 1 and No. 6 which reacted weakly with the unabsorbed serum were suspected of being A_2. The serum which had been absorbed with cells No. 1 and No. 6 still reacted with cells No. 2, 3, 4, 5, 7, 8, 9, and 10; thus cells No. 1 and No. 6 were A_2 since they had removed only the α iso-agglutinin, whereas the other cells had removed both α and α_1 and therefore were A_1. Concerning the amount of A_2 cells used for absorption, we found, in agreement with Friedenreich,[9] that an excess of A_2 cells weakens the reaction of the absorbed sera for A_1 cells; on the other hand, a minimal amount of A_2 cells fails

TABLE II
PREPARATION OF SUB GROUPING SERA

B serum absorbed with cells number	Absorbed sera vs. cells number									
	1	2	3	4	5	6	7	8	9	10
1	0	+	+	+	+	0	+	+	+	+
2	0	0	0	0	0	0	0	0	0	0
3	0	0	0	0	0	0	0	0	0	0
4	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
6	0	+	+	+	+	0	+	+	+	+
7	0	0	0	0	0	0	0	0	0	0
8	0	0	0	0	0	0	0	0	0	0
9	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0

TABLE III
ABSORPTION OF B SERUM WITH VARYING VOLUMES OF A_2 CELLS

Group B serum	Blood Cells	Dilutions of serum (No. 1879)					
		½	¼	⅛	1/16	1/32	1/64
Unabsorbed serum	A_2	3+	2+	2-1+	1+	tr.*	0
	A_1	4+	4+	3+	2+	1+	±
Absorbed with equal volume	A_2	0	0	0	0	0	0
	A_1	3+	2+	x‡	x	x	x
Absorbed with ½ volume	A_2	0	0	0	0	0	0
	A_1	4+	2+	1+	0	0	0
Absorbed with ¼ volume	A_2	tr.	tr.	0	0	0	0
	A_1	4+	2+	1+	±	tr.	0
Absorbed with ⅙ volume	A_2	±	±	0	0	0	0
	A_1	4+	4-3+	2+	1+	±	0
Absorbed with ⅛ volume	A_2	±	±	tr.	0	0	0
	A_1	4+	3+	2+	1+	±	0

* tr. = trace visible microscopically.
‡ x = not done.

to remove the reaction for A_2 cells (Table III). Our data also indicate that B sera of a medium titer should be used. In very high titer B sera, such as that of Bever, it is difficult to remove the reaction for A_2 cells and weak sera such as No. 1821 do not react with A_1 cells after absorption. (Table IV.)

RH SUBTYPING

I. *Immunologic Considerations.*

In 1940 Landsteiner and Wiener[4] discovered an additional iso-agglutinogen in man. The sera of rabbits immunized with the red cells of the *Macacus rhesus* agglutinated the cells of approximately 85 per cent of a large series of normal persons. The antigen responsible for this agglutination was named the Rh (rhesus) antigen. Rh agglutinins are not normally present in the serum, but many Rh negative persons possess the ability to develop these antibodies when the Rh antigen is introduced either by transfusion of Rh positive persons, or through the placenta of an Rh positive fetus. Levine, Katzin, and Burnham[10] were the first to postulate iso-immunization with the Rh antigen as the cause of erythroblastosis fetalis, that is, the Rh positive fetus immunizes the Rh negative female, and the diffusion of the Rh agglutinins through the placenta destroys the cells of the fetus. The Rh antigen, unlike A and B antigens, is present in the cells only.

Diagnostic sera have been prepared by Wiener[5] by injecting guinea pigs with the red cells of Macacus rhesus; however, not all guinea pigs produced suitable serum. We have immunized guinea pigs with Macacus rhesus cells in an attempt to prepare diagnostic serum, but in the process of absorbing out agglutinins other than Rh became more concerned with the antigenic structure of normal guinea pigs cells and sera. Recently, it has been shown by Davidsohn[11] that the Rh antigens of man and monkey are similar, but not identical, and that the Rh antigen in man is complex and can be subdivided into Rh_1, Rh_2, Rh_3. However, Davidsohn states that a strong human anti-Rh serum will detect most of the Rh antigens. A very good source of primary Rh agglutinins is the sera of mothers recently bearing erythroblastotic infants. The Rh agglutinins disappear very rapidly *in vitro* and *in vivo* so that such sera should be used within a month after collection.

TABLE IV
ABSORPTION OF B SERA WITH A_2 CELLS*

Unabsorbed sera	A_2 Cells (Sn) Dilutions of sera						A_1 Cells (#1911) Dilutions of sera					
	1/2	1/4	1/8	1/16	1/32	1/64	1/2	1/4	1/8	1/16	1/32	1/64
#1954	3+	3+	2+	2+	±	±	4+	3+	3+	2+	±	±
#1821	3+	3+	2+	1+	tr.	—	3+	3+	2+	1+	±	tr.
#1892	3+	3±	2+	2+	2-1	1+	4+	4+	3+	2+	2+	1+
#1903	3-2+	3+	n.d.				3+	4+	n.d.			
Type	3-2+	2+	2-1+	1+	±	±	2+	2+	2+	2-1+	1+	1+
Bever.	4+	4+	4+	4+	4+	4+‡	4+	4+	4+	4+	4+	3-2+
#1968	4+	3+	2+	2-1+	1+	±	4+	3+	2+	2-1+	1+	±
Absorbed sera												
#1954	±	tr.	0	0	0	0	3+	2+	1+	±	tr.	
#1821	tr.	tr.	0	0	0	0	2+	1+	±	tr.	tr.	
#1892	1+	tr.	0	0	0	0	4-3+	3+	2+	1+	1+	
#1903	tr.	0	0	0	0	0	4+	3+	n.d.			
Type	±	tr.	0	0	0	0	3+	3+	2+	1+	tr.	
Bever.	3+	2+	1+	tr.	tr.	tr.	4+	4+	3+	2+	2+	
#1968	1+	±	tr.	0	0	0	3+	1+	±	tr.	tr.	

* ⅓ volume used.
‡ 1+ titer = 1/1024.

II. *Role of Rh Factor in Transfusion Reactions.*

The majority of *intra-* group transfusion reactions, some fatal, are due to Rh incompatibility.[3] For this reason, in spite of the complexity of the Rh antigen, every effort should be made to use the tests at our disposal in order to detect and prevent

reactions due to Rh discrepancies. Some of our laboratory personnel, students, and donors have been investigated in respect to the Rh antigen.* Approximately 85 per cent of this group were found to be Rh positive. At the present time the blood of patients with suspicious histories, i.e., irregular obstetrical history, children with erythroblastosis fetalis, occurrence of reactions during multiple transfusions, is sent to the Blood Bank Technician a short time before the transfusion is scheduled. Using the technic described below, the patient's blood is cross-matched with the prospective donors in order to detect irregular iso-agglutinins. In the event of an *intra-* group incompatibility, the sera of the patient is checked, as far as is possible, with Rh positive and negative bloods of the same group, and every attempt is made to supply Rh negative bloods in those cases where it is indicated.

III. *Methods of Subtyping.*

In order to detect the Rh agglutinin which is very weak, it is necessary to use a more delicate test than those used routinely.

The Rh agglutinin is usually so weak (which is surprising, considering the severity of the reactions) that it cannot be detected by the open-slide method. The tube method of Landsteiner and Wiener[5] has proved satisfactory for our determinations of such low-titering agglutinins. One drop of the cell suspension is mixed with one drop of inactivated anti-Rh serum in small tubes. The tubes are incubated for one hour at room temperature if guinea pig sera is used, or at room and ice-box temperatures if human serum is being used. A characteristic granular, dispersed sediment indicates agglutination; a negative sediment is perfectly spherical with an entire margin. The suspension is then shaken lightly and observed macroscopically. Finally, a drop of the suspension is examined microscopically. When the Rh positive and negative cells have been demonstrated, an irregular agglutinin in a patient's serum may be identified as anti-Rh by cross-testing with known Rh positive and negative cells of the same group. In the event that the Rh. antigen had not as yet been determined the sera could be set up against cells from ten different persons of the same group. Sera containing Rh agglutinins should agglutinate approximately 8 or 9 of these cell suspensions.

*These tests were carried out with sera obtained from the Certified Blood Donor Agency, Jamaica, New York.

ADDITIONAL SUBTYPES

Iso-antigens M and N are present in all blood groups, but because they are not iso-immunizing they are usually not considered in transfusion reactions.* However, the detection of these antigens‡ is of great value in: medico-legal studies, anthropological studies, research, and studies of the survival of incompatible cells in the patient. This last method, although used successfully by Wiener,[3] will probably not be used in Hospitals unless the laboratory has additional personnel for research purposes.

The Hr antigen does not seem to have been accepted entirely.[12] It has been used to explain rare *intra-* group reactions occurring when Rh positive persons have been transfused with Rh negative blood. Evidently Rh positive persons do not possess this antigen, whereas Rh negative persons do. Presumably all the comments made concerning the Rh factor can be repeated in a discussion of the Hr factor, at least as far as has been reported.

The P antigen has been reported in 2 cases to have been responsible for a reaction[1, 3]; but, again, the detection of this antigen is not a problem for the average Hospital laboratory.

SUMMARY

Hospital laboratories and blood banks which are concerned with the grouping of large numbers of bloods for transfusion purposes should attempt to prevent transfusion reactions caused by *intra-* group incompatibilities. While the infrequent occurrence of *intra-* group transfusion reactions caused by irregular subgroup agglutinins does not warrant their being used routinely for every transfusion, the tests are so simple that their use is indicated in certain cases, as follows: The detection of subgroups A_1 and A_2 should be performed routinely only in patients receiving multiple transfusions, and in whom incompatibility due to the Rh factor has been eliminated. Most of the *intra-* group reactions are due to Rh incompatibility. Every attempt should be made to employ the present methods for the detection of Rh agglutinogens and agglutinins. Serum containing Rh agglutinins can be obtained as described in the text, and used to detect the Rh antigen in donors and laboratory personnel. Using the cross-matching tube technic of Landsteiner and Wiener,

*Only 3 cases of anti-M have been reported and no cases of anti-N.

‡Immune rabbit sera is prepared by the injection of OM and ON cells, followed by careful absorptions. Very potent sera is available commercially.

Rh agglutinins can then be detected in the patients' serum. An attempt should be made to check, prior to transfusion, the Rh status of each patient who has had an irregular or pathologic obstetrical course, or whose history shows previous miscarriages or abortions of unexplained nature, or who has had previously infants showing erythroblastosis.

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CASE REPORT OF TYPE 2 PNEUMONIA NOT RESPONSIVE TO SULFA PREPARATIONS

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I was first called to the home to see M. L. H., white male, age 39, on December 5, 1942, complaining of generalized aching especially in the back and extremities and a fever. On examination I found a well developed, well nourished white man lying in bed very restless and with a flushed face, temperature 104 degrees, pulse 100, respiration 26. The physical examination was negative except a red throat. A diagnosis of "flu" was made and treatment prescribed accordingly.

On my visit the next day, December 6, I found T. 103 degrees, P. 108, R. 36. There were some fine crepitant rales heard over the base of the right lung posteriorly, and a diagnosis of lobar pneumonia was made. Sulfathiazole in the usual dosage was prescribed along with general supportive treatment. The patient did not make any change except the temperature would drop to around 100 degrees at times but fluctuated to 103 degrees until on the evening of December 8, when he had a total of 30 seven and one-half grain tablets of sulfathiazole; this was discontinued, thinking the patient might have a virus pneumonia.

The next morning, December 9, showed the pneumonia had extended to the middle lobe, at which time he was started on sulfadiazine and this was continued through December 12, but the patient progressively grew worse and on the evening of December 11, I found the pneumonia had extended until the entire right lung was involved. It was decided to obtain a specimen of sputum for typing which was collected during the night of December 11, and sent to a Lynchburg hospital—this being the nearest hospital to Altavista for typing—on the morning of December 12, and was reported to be type 2 pneumococcus.

I decided to put the patient on specific serum and sent to Richmond (130 miles distance) for the serum. We obtained 100,000 units of type 2 (rabbit) anti-pneumococcic serum from the State Health Department.

On the afternoon of December 12, the patient began to have considerable difficulty in breathing and had a respiratory rate of 50. One ampule of coramine subcutaneously every four hours relieved the respiratory difficulty considerably and 1000 cc. of 10 per cent glucose in normal saline was given intravenously in preparation for the pneumonia serum, although the patient had been taking fluids exceptionally well throughout his entire illness. At 6:20 P. M., December 12, the patient was given 10 grains of aspirin and tested for sensitivity to serum. At 7 P. M. he was given 20,000 units of serum intravenously and forty-five minutes afterwards he had a thermal reaction with respiratory difficulty which was relieved by the usual nursing principles plus adrenalin and coramine by "hypo". At 9:30 P. M. he was given 10 grains of aspirin, and at 9:40 P. M. 40,000 units of serum intravenously, which was followed in about one hour by a

severe reaction; the pulse and respiratory rates were difficult to obtain, but this again was relieved by nursing principles—adrenalin and coramine. At midnight, T. was 101 degrees, P. 96, R. 38, and the patient's general appearance was better than it had been for three or four days. At 2 A. M., December 13, he was given 10 grains of aspirin, and at 2:30 A. M. another 40,000 units of serum intravenously. At 4 A. M., T. was 100 degrees, P. 88, R. 32; at 6 A. M., T. was 98, P. 84, R. 26, with a general marked improvement in the patient.

Through the day of December 13, his highest temperature was 101.6 degrees. From December 14, thirty-six hours after the institution of serum treatment, the patient did not run temperature above 99. 6 degrees but did continue to run a temperature around 99 degrees in the afternoons for about a week. There was a gradual resolution of the lung involvement requiring about ten days after the institution of serum and eighteen days after the onset of illness for complete resolution.

This patient ran a normal temperature from December 24, 1942, (19th day of illness) until January 3, 1943, when he suddenly began to run a temperature and showed signs of recurrent pneumonia. I checked him in my office January 1, finding his temperature normal and chest clear except for a pleural friction rub over the right base but he did not look well generally.

On January 4, 1943, I found him quite ill—T. 104 degrees, left pupil reacted sluggishly to light and physical signs of pneumonia in lower half of right lung. Hospitalization was advised, and the patient was carried to Medical College of Virginia Hospital, at Richmond, where he remained from January 4 to January 16, 1943, and was discharged with the diagnosis of atypical (virus) pneumonia, having recovered by lysis on the symptomatic treatment.

Conclusion: A patient with type 2 pneumonia which progressively grew worse with the extension of lung involvement while being treated with two different forms of sulfa preparations made a dramatic response to 100,000 units of type 2, antipneumococcic (rabbit) serum. This patient ten days later had recurrent pneumonia diagnosed as atypical (virus) pneumonia from which he recovered by lysis on symptomatic treatment.

SOCIAL FORCES COMPEL PROFESSIONAL PLANNING FOR MEDICAL ECONOMY*

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Several factors evolving from the social and economic patterns of our present democratic philosophy make it imperative that the medical profession take immediate steps to safeguard its future. The situation is recognized and evaluated in a recent issue of the VIRGINIA MEDICAL MONTHLY. In the "guest editorial" of this publication for the month of January, 1943, A. M. Simons, the Assistant Director of Medical Economics of the American Medical Association, cogently states:

> "in the swiftly changing world today many roads are open but the one marked 'status quo' is closed. If the medical profession does not choose where it will go, less competent powers will choose for it."[1]

During the past several years, there has been evidence of a constantly increasing interest on the part of certain groups in "social insurance" designed to provide "a reasonable amount of security against the major hazards of life".[2] For our laboring classes, this conception of "social insurance" includes "(1) provisions for old age and for dependent survivors at death, (2) unemployment, and (3) health".[3]

While the problems resulting from old age, death and loss of employment by the wage earner have been partially solved by our present social security legislation, compulsory health insurance has received relatively little attention. This is probably due to the magnitude and complexity of the problems encountered in the development of the program.

Falk in "An Introduction to National Problems in Medical Care" observes that:

*Presented to the Lynchburg Academy of Medicine, Monday, March 1, 1943, as part of a report of the Committee on Prepaid Medical and/or Surgical Plan, Dr. James R. Gorman, Chairman.

"The costs of illness or medical needs are highly variable in their impacts upon family budgets and security. Small costs for medical care may be absorbed in the family budget which is above the bare subsistence level; but the occurrence of a 'high cost' illness, even when moderate fees are charged for each unit of service, may be a financial catastrophe for a family of small, modest or even substantial means.

"Illness and disability are not considerate of the family exchequer, and large costs may fall on small purses, The plain fact, well attested by numerous studies, is that families cannot, even if they would, budget against expenditures which come unexpectedly and which fluctuate within such broad ranges that they may exceed even annual income, and at the same time destroy earning power."[4]

Evidence of the fact that the costs of health services frequently constitute a major problem in family finance may be found in the number of bankruptcy petitions which list liabilities for hospital and professional services.

Of the thirteen pending "pauper" cases on file locally on February 10, 1943, every one, without exception, included amounts owed to at least one doctor or physician. One man listed nineteen, and another seventeen, different doctors to whom money was owed for services rendered. Nine of the cases had outstanding bills from five or more doctors, and in one instance, every listed "open account" was for medical, surgical or hospital service. In eight instances, unpaid hospital bills were listed. This, I understand, was not an unusual condition.

It might be argued that these individuals are indigents and that they expect any services rendered to them to be provided without charge. This, however, is not always the case.

For example, the person listing seventeen doctors to whom amounts were owed for professional services happens to be enrolled in the Piedmont Hospital Service Association. Two bills were paid for members of this man's family during the past few months. The fact that this individual has subscribed (and in time of financial stress, continues his membership) has not only assured the hospital of payment for services rendered, but also indicates a willingness to participate in, and an ability to maintain, some method of spreading the cost of service.

Without attempting to go into the question of the justification for these bankruptcies, which, of course, is impossible, the regularity with which doctor's bills appear in the statements would indicate that there is a pressing need for some solution to the problem of financing medical costs from the physician's as well as from the patient's point of view.

While it is debatable as to where the ultimate responsibility rests, it is nevertheless true that there is considerable agitation for some form of compulsory health insurance. Political and labor leaders are finding in this an opportunity of appealing to large numbers of workers who find it exceedingly difficult to meet the unpredictable expense coincident with illness.

Although little has actually been accomplished in securing the required legislation to initiate the program, several sporadic attempts have been made. Without going into detail, a review of some of the developments in the field of medical care during the past decade indicates activities that are growing progressively imminent. These include:

(1) The appointment in 1934 of the "Committee on Economic Security" which drafted the Social Security Bill. This draft, incidentally, was expected to include "health insurance" but opposition to this part of the program was sufficient to exclude it from the proposal which was finally presented to Congress.[5]

(2) Immediately after this Bill was passed, the "Interdepartmental Committee to Coordinate Health and Welfare Activities" was appointed by the President. A sub-committee called the "Technical Committee on Medical Care", continues the work begun in 1934 in connection with medical service. It was the reports of this latter committee entitled "The Need for a National Health Program" and "A National Health Program" which provided the impetus for the legislative proposals of Senator Wagner of New York.[6]

(3) After the introduction of the Wagner Bill, popularly known as the "National Health Bill", but which was actually a series of amendments to the Social Security Act, compulsory health bills were introduced in a "considerable number of states".[7] The fact that such influential States as California, New York and Wisconsin have considered laws for such purposes indicates that compulsory health plans have been seriously regarded in several sections of the country.

(4) The "Elliot Bill", introduced on September 9, 1942, and known as the "Federal Social Insur-

ance Contributions Act" (H.R. 7534), which came as a result of a request from a national labor group for the inclusion of temporary disability and hospitalization benefits in the present Social Security Law, failed to be reported out of the committee to which it was sent for consideration.

(5) On January 11, 1943, Senator Green of Rhode Island, introduced a bill "to amend and extend the provisions of the Social Security Act" (S. 281). Among the salient features of this proposal are:

(a) The extension of the provisions of the So-Social Security Law to include practically all employed persons now excluded in the program.

(b) The modification of the present provisions by defining "old age assistance" to include "payments necessary for medical services" for needy aged individuals.

(c) Hospitalization benefits for workers and their families patterned after the proposal set up in the "Elliot Bill". Briefly, this provides indemnification benefits for a minimum of 30 and a maximum of 60 days, with allowances ranging from $3.00 to $6.00 per diem, for which employer and employee will each contribute an amount equal to one-half (½) per cent of the workers' wages up to a maximum of $3,000.00 per year.

The status of this bill, which has been referred to the Senate Committee on Finance, is somewhat uncertain.[8] There is evidence, however, that other similar compulsory hospital insurance plans will be presented to the present session of Congress if the pending bill is not passed.[9] All indications point to a more determined effort on the part of the advocates of a more comprehensive social security program when the other attempts are made, and, obviously, compulsory medical care to be far removed from it in legislative proposals.

(6) The recent decision of the United States Supreme Court upholding a lower court's conviction of the American Medical Association and the District Medical Society for violation of the "Sherman Anti-Trust Act" may have far-reaching effects upon the attitude of the general public when legislation is proposed.

(7) The "Beveridge Report", recently published in England, revising and enlarging their present social security program, which already includes some provisions for "health insurance", may very likely encourage similar legislation in this country.[10]

There can be little doubt concerning the trend. Some method of financing and distributing the costs of medical care will unquestionably develop, either through a voluntary system, or by political compulsion.

It is interesting to note, in this connection, that the very agency which was formerly viewed with suspicion as the "Opening-wedge" for "socialized medicine", has not only ceased to be a threat in that direction, if it ever was such, but has now emerged as the most effective means of counteracting the trend toward governmentally controlled health services. I refer, of course, to the hospital service plans, which during their formative years were openly opposed by some members of the medical profession, and even now, are reluctantly tolerated as a "necessary evil" in many instances.

It now appears that through the formation of non-profit, professionally sponsored medical plans will come the answer to the problem of budgeting for medical care, and which at the same time, will enable the profession to maintain control of its own organization. Neither commercial insurance plans, whose fundamental purpose is "profit", nor compulsory politically controlled programs will accomplish this. In both cases, the reasons are obvious.

It would seem, then, that the opportunity is at hand for action by the profession in developing a program of health service which will preserve the traditional pattern of medicine and its correlated services. No other agency can solve the problem; it must come from the profession itself in order to be adequate and satisfactory. This is succinctly stated in the editorial quoted above

> "events . . . forecast extensive social changes when the eagerly awaited peace arrives. Medical arrangements will not be isolated from these changes, nor can organized medicine remain indifferent to them without risking the achievements of many centuries."[11]

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CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient, an 18 year old primipara, registered in the clinic on June 12, 1941, at which time she was about seven months pregnant. She was very obese, blood pressure 110/75 and a trace of albumin in the urine. She returned every two weeks for prenatal care and on July 17th her blood pressure was 130/90. There was one plus albumin in the urine and she had gained six pounds in weight. On July 23rd a physician was called to her home on account of convulsions, blood pressure 164/122. She was given morphine grains 1/6 and 2 cc. of 50 per cent solution of magnesium sulfate intramuscularly and referred to the hospital.

Patient was admitted to the hospital at 11:45 A. M. on July 23, 1941, with a history of having had two convulsions the night before admission and one convulsion on the day of admission. She had had edema of the feet and legs for a month. On admission she was mentally clear, blood pressure 160/110, Wassermann negative, R.B.C. 4,100,000, hemoglobin 75 per cent, and W.B.C. 12,600. On July 25th, two days after admission, she was improved except for limited urinary output, the toxemia apparently being controlled, blood pressure 140/104. An attempt was made to induce labor on July 25th by manually dilating the cervix using a Hegar dilator, and inserting a No. 5 Voorhees bag. A two and one-half pound weight was then attached to the bag. Morphine grains 1/6, and Scopolamine grs. 1/200 were given before the operative procedure was started. The bag was removed from the vagina eight hours after its insertion. The membranes ruptured spontaneously and an arm prolapsed into the vagina. This was replaced and under Cyclopropane anaesthesia a tenaculum was attached to the baby's scalp. On the following day, July 26th, the blood pressure was 186/128. The patient had been semi-comatose since the administration of the anaesthesia. The head was high in the pelvis. There had been almost complete anuria for the past twenty-four hours. At this time, after consultation it was decided to treat the toxemia and make no further attempts at delivery. Although she had never been in labor it was decided, eighteen hours later, on July 27th, to attempt delivery as a last resort, after 1/100 grs. of Scopolamine was given. The vertex was above the spines and there was a thin but firm rim of cervix present. To avoid lacerating the cervix a craniotomy was done. Her condition remained poor following delivery, coma persisting, and she died three hours later. During her stay in the hospital she was given either 300 cc. of 25 per cent glucose or 200 cc. of 50 per cent glucose daily for anuria. She also received 20cc. of 10 per cent solution Magnesium Sulfate intravenously on the 23rd, 24th, and twice on the 26th. Her temperature was 100 until the 25th and then remained between 101 and 103 being septic in character until she died.

COMMENT

This has been classified as a preventable death by the committee. Prenatal care was inadequate. This was a relatively mild case of eclampsia according to Eden's classification, and we believe should have recovered. She was recovering from the toxemia, the convulsions having been controlled and the blood pressure improved when operative inter-

ference was instituted. This case illustrates the importance of treating the disease, waiting to empty the uterus until the kidneys are functioning well. There seems to be no definite course of treatment in this case and no mention is made of the use of digitalis and oxygen, two recognized valuable aids in the treatment of this disease. The mortality from toxemia has been greatly reduced and no longer occupies first place in maternal mortality in the State of Virginia. This should and can be further improved by closer supervision of our cases and continued conservatism in treatment.

MENTAL HYGIENE NOTES

Annual Report.

The State Department of Mental Hygiene and Hospitals has just released the one hundred and sixty-ninth annual report of Virginia's efforts to care for and treat its mentally ill and mentally deficient.

Exclusive of the superintendents, there were twenty-one physicians in all the institutions as of June 30, 1942, to care for an average of 11,333 patients, which is a ratio of 1 to 564. This is a low from a high of twenty-six in the year ending June 30, 1940, with a ratio of 1 to 413.

There were 812 nurses and attendants with a ratio of 1 to 13.9 which compares with a high of the year previous of 862 and a ratio of 1 to 12.9.

One thousand two hundred and twenty employees of all types, or a ratio of 1 to 9.1, were on duty June 30, 1942, as compared with 1,296 and a ratio of 8.6 the year previous.

The report shows that progress was made in the nurse and attendant training program under the supervision of Mrs. Lela S. Anderson, R.N., and in the State-wide system of patient and employee libraries through the supervision of Miss Bess Paterson Walford. Occupational therapy also was extended to some extent at Eastern State Hospital and to a greater extent at Southwestern, both of which had graduate therapists. Central State Hospital continued its fine work as in the past under the direction of four trained therapists, but not graduates.

When the ratio of physicians to patients of 1 to 564 is compared with the American Psychiatric Association ratio of 1 to 150, and when the nurse and attendant ratio of 1 to 13.9 is compared with that of 1 to 8, one can readily imagine the difficulties Virginia's mental hospitals are encountering in the effort to properly care for and treat the 11,336 patients who were in the institutions on June 30, 1942.

Mental hygiene clinics were conducted on a part-time basis by Dr. Joseph E. Barrett in seven localities in southwestern Virginia and by physicians from the Central State Hospital at the Medical College of Virginia and at the hospital. A total of 401 patient visits were made to these clinics during the year by 247 patients. Two hundred and five persons were referred by health and welfare agencies, physicians, courts, and schools, and 70 other persons came regarding patients.

During the year 332 sterilizations were performed, making a total of 4,385 since the sterilization law become effective in 1924.

Overcrowding existed in three institutions, with 758 beyond capacity; Central with 535, Eastern 101, and Lynchburg State Colony 122.

Total land acreage all hospitals	6,843
Value of farm products produced	$ 269,152.27
Total value all property all institutions	10,653,616.24
Total expenditures for care and treatment of patients	2,281,191.20
Per capita cost Year $201.29 Day	.5515
Total capital outlay expenditure	129,040.95
Daily cost for food per person	.1941
Number patients resident in all institutions 6/30/42	11,336
Number on books but on parole or otherwise out	2,761
Total under care of institution 6/30/42	14,097

Submitted by

F. W. GWALTNEY,
Executive Secretary.

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for March, 1943, compared with the same month in 1942, and for the period of January through March, 1943, compared with the same period in 1942, follows:

	MAR. 1943	MAR. 1942	JAN.-MAR. 1943	JAN.-MAR. 1942
Typhoid and Paratyphoid Fever	8	4	36	42
Diarrhea and Dysentery	143	73	322	297
Measles	2,459	993	4,068	2,372
Scarlet Fever	203	141	612	491
Diphtheria	31	39	124	155
Poliomyelitis	2	1	10	1
Meningitis	141	21	390	52
Undulant Fever	0	4	6	6
Rocky Mountain Spotted Fever	0	0	0	1
Tularemia	3	4	22	18

THE PREVENTION OF WHOOPING COUGH

Rapidly accumulating evidence indicates that whooping cough must soon be included in the group of major infectious diseases which are practically controllable by the use of specific biological agents. The prophylactic value of pertussis vaccine in early childhood is already well established, and it is being used more and more widely for the immunization of children and of infants in the last half of the first year of life.

The effectiveness of this method of immunization has been inferred from abundant laboratory data, and has been well confirmed by clinical experience in large numbers of inoculated children with appropriate controls. Statistical evaluation of the incidence of whooping cough among immunized and unimmunized children under similar exposure to infection shows a highly significant difference in the two groups confirming the active immunization power of pertussis vaccine.

Protection by this means, however, has not been available for very young infants though they are highly susceptible to this severe and frequently fatal malady. Few infants inherit sufficient passive immunity to be detected even by the sensitive mouse protection test, and their ability to develop active immunity after the administration of pertussis vaccine is acquired very slowly.

A recent report of Cohen and Scadron[1] indicates that protection during early infancy may be attainable by inoculation of pregnant mothers with pertussis vaccine. At about the fifth or sixth month of pregnancy, these investigators administered the vaccine to mothers at intervals of two weeks with six doses totaling 150 billion organisms and found high antibody production. The last injection was given six or eight weeks before term. General reactions were few and mild, and local reactions were not serious though common. There were no discernible ill effects on pregnancy, on deliveries or on the babies. In each of 29 cases in which antibody production was measured by mouse protection tests, the protective titer was raised to a very high level and was almost quantitatively transmitted to the baby. Further studies are being made to ascertain the persistence of the antibodies and the relative incidence of pertussis in the babies of immunized mother and of unimmunized controls.

Continued research in this field is highly desirable in view of the high morbidity and mortality rates of whooping cough in infancy. If the procedure proves as effective and practicable as pertussis vaccination in late infancy and childhood, control of this major disease would seem assured. While awaiting final evaluation of this promising procedure, more extensive use should be made of the vaccine in children and infants mature enough to benefit from it.

1. Cohen, Philip and Scadron, S. J., *Placental Transmission of Protective Antibodies Against Whooping Cough by Innoculation of Pregnant Mother, J.A.M.A.*, February 27, 1943.

Miscellaneous

Distinguished Medical Officers Honored at Winter General Hospital, Topeka, Kansas

Winter General Hospital, Topeka, Kansas, is named for the late Brigadier-General Francis Anderson Winter, who was Surgeon of the Lines of Communication in France early in the First World War and later was our senior medical officer in Great Britain.

This institution has adopted the interesting plan of naming its important clinics, buildings and streets for distinguished deceased medical officers of the

Army who so far have never been honored by having their names given to buildings, general hospitals, or other entities of the Medical Department, U. S. Army. Winter General Hospital is the first of the Army's general hospitals to take this step.

The names are selected as appropriate for the particular clinic or building. The names of the streets are those of medical officers who have become the heads of other branches of the Army. In some instances Army posts have been named for these chiefs of other branches, but there has heretofore been no medical building or institution named for them.

The following are the names so far selected:

1. The Waterhouse Medical Clinic

Named for Surgeon Benjamin Waterhouse (1754-1846) of Massachusetts who introduced vaccination in America; first Professor of Medicine at Harvard.

2. The John Jones Surgical Clinic

Named for Surgeon John Jones (1729-1791) of New York who wrote the first American medical book, founded the New York Hospital; first professor of Surgery at King's College, now Columbia University.

3. The Northington Roentgenological Clinic

Named for Colonel Eugene Garland Northington (1880-1933) of Alabama, pioneer student of military roentgenology; lost both arms and finally his life from malignancy due to exposure to the rays before their danger was known to science.

4. The Rodriguez Dental Clinic

Named for Major Fernando Emilio Rodriguez (1888-1932) of Puerto Rico, who made the first studies of the bacteriology of dental caries.

5. The Keen Neurosurgical Clinic

Named for Major William Williams Keen (1837-1932) of Pennsylvania, pioneer student, with his colleagues, Acting Assistant Surgeons Silas Weir Mitchell and George Reed Morehouse, of gunshot wounds of nerves; one of the few medical officers who served in both the Civil and World Wars.

6. The Rush Neuropsychiatric Clinic

Named for Surgeon General Benjamin Rush (1745-1813) of Pennsylvania, author of the first American book on insanity, the only systematic American treatise on the subject before 1883; signer of the Declaration of Independence; founder of the University of Pennsylvania.

7. The Shippen Clinic for Women

Named for Director General William Shippen, Jr. (1736-1808) of Pennsylvania, first teacher of obstetrics in America; first professor of surgery in America, founder of the University of Pennsylvania.

8. The Woodward Laboratory

Named for Lieutenant-Colonel Joseph Janvier Woodward (1833-1884) of Pennsylvania, pioneer in photomicrography; eminent anthropologist; President of the American Medical Association.

9. The Fletcher Medical Library

Named for Colonel Robert Fletcher (1823-1912) of the District of Columbia, first Editor of the *Index Medicus;* eminent bibliographer and anthropologist.

10. The William Brown Pharmacy

Named for Physician General William Brown (1748-1792) of Virginia, author of the first American Pharmacopeia.

11. McGee Hall (Nurses Quarters)

Named for Contract Surgeon Anita Newcomb McGee, M.D., R.N., (1864-1940) of the District of Columbia, organizer of the Army Nurse Corps and leader in advancing the profession of nursing in America.

12. Boschen Hall (Enlisted Men's Recreation Building)

Named for Major-General Frederick Wegener Boschen (1876-1942) of New York, Hospital Steward who became Chief of Finance of the United States Army.

13. Leonard Wood Road

Named for Major-General Leonard Wood (1860-1927) of New Hampshire, who won the Medal of Honor for extreme gallantry as a medical officer, and who became Chief of Staff of the Army.

14. Ainsworth Road

Named for Major-General Fred Crayton Ainsworth (1852-1943) of Vermont, the medical officer who devised the Army's system of personnal records and who became Adjutant General of the Army.

15. Eustis Road

Named for Surgeon William Eustis (1753-1825) of Massachusetts who served as a medical officer during the Revolution and became Secretary of War in President Jefferson's cabinet; Member of Congress; Governor of Massachusetts.

16. McHenry Road

Named for Surgeon James McHenry (1753-1816) of Pennsylvania who served as a medical officer during the Revolution and became Secretary of War

in President Washington's and President Adams' cabinets; Member of Congress; Member of the Convention which framed the Constitution of the United States.

17. Myer Road

Named for Brigadier-General Albert James Myer (1828-1880) of New York, distinguished field surgeon and student of military communication systems; founder of the Signal Corps and first Chief Signal Officer of the Army; father of the Weather Bureau.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

The Norfolk Auxiliary

Had its annual luncheon in celebration of Doctors' Day on March 15th at Ames and Brownley's Tea Room. A brief business session preceded the luncheon. Mrs. C. C. Cooley and Mrs. Stark A. Sutton were made chairman and co-chairman of a committee to fill Ditty Bags for the Red Cross and a donation for this purpose was voted by the members.

Mrs. W. E. Butler, President, welcomed the guests and introduced Mrs. Richard Peake, chairman of Doctors' Day. On behalf of the Auxiliary, Mrs. Peake announced the gift to the Norfolk County Medical Society of a renewal subscription to "The Annals of Surgery". The main feature of this program was the presentation to the Norfolk County Medical Society of an Honor Roll of the members who are serving in the armed forces. The Honor Roll, draped with an American flag, was unveiled by Mrs. M. N. King who made the presentation. It contains 43 names of doctors who have become officers in the services, and space for more. Over all is the American eagle, and just below it, the doctor's insignia, the Caduceus, which had been owned and used by the late Dr. Peake. Mrs. King, in making the presentation, paid a tribute to the doctors serving here on the home front against tremendous odds in the crowded area as well as to those on the war fronts. She read the names on the Honor Roll and stated the branch of service in which they are serving.* The Honor Roll was accepted by Dr. A. Brownley Hodges, President of the Society.

Dr. Julian L. Rawls then gave a very interesting talk on "General Aspects of Cancer".

Guests at this meeting included Mrs. W. A. Porter and Mrs. H. L. King of the U. S. Marine Hospital and one new member, Mrs. Istram Gaspar.

MRS. BROCK D. JONES,
Chairman, Press and Publicity.

*These names have all been published in the MONTHLY in the list of Doctors in the Service.

Warwick County Auxiliary.

At the meeting on February 2nd, officers were elected as follows: President, Mrs. Paul Hogg; vice-president, Mrs. Barnes Gillespie; recording secretary, Mrs. E. W. Buckingham; corresponding secretary, Mrs. C. E. Holderby; treasurer, Mrs. Murray Dick; and historian, Mrs. H. W. Potter. Committees and their chairmen are: Pre-Natal, Mrs. T. C. Lawford; Membership, Mrs. J. C. Cutler, Publicity, Mrs. W. A. Mitchell; Linen, Mrs. W. R. Payne; *Hygeia* and Bulletin, Mrs. G. C. Amory; and Program, Mrs. Russell Buxton.

Petersburg.

At the March meeting of the Petersburg Auxiliary, Dr. Frank G. Sayers, pastor of the First Christian Church, spoke on Russia and gave an enlightening and interesting talk on that country, its government and its conditions.

Routine business was discussed and appreciation was expressed for the contributions made by members of the colored churches to the recent linen shower for the Petersburg Hospital.

$36.50 was contributed to the Memorial Bed Fund.

Mrs. Henry M. Snead is president of this Auxiliary.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of

receipt. However, we assume no obligation in return for the courtesy of those sending us same.

The March of Medicine. The New York Academy of Medicine Lectures to the Laity, 1942. New York. Columbia University Press. 1943. xiv-217 pages. Cloth. Price $2.50.

The Inner Ear. Including Otoneurology, Otosurgery, and Problems in Modern Warfare. By JOHN FISHER, M.D., Staff Member, Beth Israel Hospital, Boston. And LOUIS E. WOLFSON, M.D., Instructor in Ear, Nose, and Throat, Tufts Medical School; Senior Surgeon in Ear, Nose, and Throat, Boston Dispensary. 1943. Grune and Stratton, New York. xii-421 pages. Illustrated. Cloth. Price $5.75.

The Kenny Concept of Infantile Paralysis and Its Treatment. By JOHN F. POHL, M.D., Clinical Assistant Professor of Orthopedic Surgery, University of Minnesota; Attending Orthopedic Surgeon, Minneapolis General Hospital. In Collaboration with SISTER ELIZABETH KENNY, Honorary Director the Elizabeth Kenny Clinics of Australia; Honorary Director the Elizabeth Kenny Institute, Minneapolis. With a Foreword by FRANK R. OBER, M.D., President, The American Orthopedic Association. Bruce Publishing Company, Minneapolis and St. Paul. 1943. 366 pages. Illustrated. Cloth. Price $5.00.

Flying Men and Medicine. The Effects of Flying Upon the Human Body. By E. OSMUN BARR, M.D. Funk & Wagnalls Company. New York. 1943. xv-254 pages. Cloth. Price $2.50.

The Principles and Practice of War Surgery. With Reference to the Biological Method of the Treatment of War Wounds and Fractures. By J. TRUETA, M.D., Formerly Director of Surgery, General Hosital of Catalonia, University of Barcelona; Assistant Surgeon (E.M.S.) Wingfield-Marris Orthopaedic Hospital, Oxford; Acting Surgeon-in-Charge, Accident Service, Radcliffe Infirmary, Oxford. With Introduction by Owen H. Wangensteen, M.D., Minneapolis, Minn. St. Louis, The C. V. Mosby Company. 1943. 441 pages. Illustrated. Cloth. Price $7.50.

This book is a timely addition to our knowledge of the surgery of war casualties. Dr. Trueta had extensive experience in the treatment of air raid casualties as surgeon-in-chief at the Barcelona Hospital during the Spanish Civil War and has continued his work at one of the foremost British Orthopedic Hospitals during the present conflict. He is therefore exceptionally well-qualified to speak on war surgery.

The title of this book is somewhat misleading, as there is no consideration whatever of head, thoracic, or abdominal wounds, a group comprising a fairly large percentage of the total wounds seen in modern war. The principal portions of this monograph are concerned with the proper closed plaster treatment of compound fractures, especially of the lower limb. In this treatise, for the first time in English, Trueta has explained carefully what has become popularly known as the "Trueta technic" of the care of compound fractures caused by high velocity fragments. A careful reading of this work convinces the reviewer that much of the criticism of Trueta's work is unjustified. He goes into great detail in considering the importance of proper excision of damaged skin and muscle before the reduction of a fracture and application of the cast. The principles of traumatic surgery are so well outlined in the first portion of this book that it should be almost compulsory reading for surgeons who must treat traumatic wounds. He has discussed quite adequately the recent advances in bacteriology of traumatic wounds and stresses the importance of Drinker's work in the role of rest in reduction of lymph flow at the site of trauma. Probably not enough attention is devoted to the *local* use of the sulfonamides.

In treatment of fractures of the upper extremities it is unfortunate that no reference is made to the so-called "hanging cast" for fractures of the humerus, by which method such excellent results are being obtained in the present war. Nor is there any reference to recent use of the Roger Anderson or Stader methods of treatment of fractures of the leg, which methods are being found to be valuable by our own armed forces.

There is a rather good chapter on the historical aspects of the development of war surgery, largely from the European point of view. There is no mention of contributions of earlier American military writers such as Mitchell and DaCosta. Quite proper credit is given to the important work of Winnett Orr.

The chapters on shock and blood transfusion, although limited in space, and dealing very little with the theoretic aspects of these matters, are quite well written and contain very practical suggestions.

The chapters on the treatment of burns and skin grafting in war surgery were thought by the reviewer to be too short, as was the treatment of problems of amputation, and injuries to nerves, arteries and tendons. The entire work is written from the point of view of the army surgeon and little attention is devoted to the many problems that confront the naval surgeon.

The reviewer believes, however, that despite the shortcomings of this work and the fact that it is largely a monograph on the Trueta-Orr method of care of compound fractures in war casualties, it is nevertheless a highly valuable addition to the library

of the surgeon who must treat traumatic injuries.

E. I. E.

The Management of Fractures, Dislocations, and Sprains. By JOHN ALBERT KEY, B.S., M.D., St. Louis. Clinical Professor of Orthopedic Surgery, Washington University School of Medicine; Associate Surgeon, Barnes, Children's, and Jewish Hospitals. And H. EARLE CROMWELL, M.D., F.A.C.S., Birmingham, Ala., Orthopedic Surgeon to the Tennessee Coal, Iron and Railroad Company and the Orthopedic and Traumatic Services of the Employees' Hospital and to the American Cast Iron Pipe Company; Chairman of the Committee on Fractures and Traumatic Surgery of the American Academy of Orthopedic Surgeons; etc. Third Edition. St. Louis. The C. V. Mosby Company. 1942. 1303 pages. Illustrated. Cloth. Price $12.50.

The third edition of this popular text and reference book has maintained the standard set by previous editions. In the author's words, "the most extensive changes have been made in the sections devoted to fractures of the spine, humerus, hip and foot." Other extensive revisions have been made in the chapter on compound fractures as a result of the changes in technique that have followed the use of sulfonamide drugs in these injuries.

The book is divided into two sections. The first part is devoted to a consideration of the general principles of treatment of fractures and dislocations and their complications. It includes a discussion of the process of healing and the factors that lead to a delayed or non-union. This section is thoroughgoing but at the same time free of confusing academic controversy. It is calculated to give the clinical man a clear and concise knowledge of these principles on which he can base his plan of treatment in any individual case.

The second edition is much larger and is comprised of 1058 pages dealing with the specific injuries which may occur to any of the various parts of the skeletal system. It discusses the anatomy involved, the diagnostic points and the complications, but the greatest emphasis is placed on the specific means of treatment. The discussion is supplemented profusely by photographs and x-rays. The text must be read to be appreciated. It can be recommended heartily to any doctor who may be called upon to treat traumatic injuries and to medical students.

WILLIAM S. STRYKER, M.D.

Tables of Food Values. By ALICE V. BRADLEY, M.S., Associate Professor of Nutrition and Health Education, State College, Santa Barbara, California. Completely Revised and Enlarged. The Manual Arts Press, Peoria, Ill. 1942. 224 pages. Cloth. Price $3.50.

This is an extensive list of food values for almost any kind of food you can think of, from cocktails to nuts. There is a brief discussion of dietary components, including the vitamins and their daily requirements, and a chapter on planning diets. The first half of the book lists the nutritional values of each food in one place, i.e., the amount of proteins, fat, carbohydrates, calories, various minerals and vitamins in an average serving of each food. Another convenient arrangement is that of listing the name of the food at each end of the line to avoid confusion. The second half of the book lists the same characteristics of the more commonly used foods per 100 gram portions, to aid in exact computations of dietary values.

Of course, every book has its weak points, which when pointed out by competent reviewers, are corrected by the author in the next edition—sometimes. Hence, I list my personal objections to the following minor points. The author gives only the values for A, thiamin, riboflavin, and ascorbic acid, and not for D. Presumably this is because we should receive this in the form of cod liver oil. However, since most adults do not take this, it should be advisable to point out that such foods as eggs, tuna fish, salmon and liver, contain appreciable quantities; an added reason for incorporating them in a diet. On page 19, the author states that irradiation of milk activates its ergosterol. Should this not be dehydrocholesterol? I am not convinced that (p. 20) vitamin D "is essential . . . for curing difficult types of dermatitis, e.g., eczema, acne, and psoriasis." (Moreover, what is a "difficult type?") On page 29, why are fish liver oil and irradiated evaporated milk the only foods listed as important sources of vitamin D? What about tuna fish, and fortified and metabolized D milks?

The section on Bar Terminology is extensive, defining in grams (it should be in cc.) such technical terms as dash, hooker, snort, spot, squirt, and wallop (40 cc.). However, the manifest failings of the cocktail recipes would indicate that the author did not put her heart and soul into it, although she did include everything else—i.e., her mint juleps contain such artifacts as soda water, lemon, orange, pineapple, and a cherry—not to mention a piece of lemon in Scotch highballs!

Nevertheless, this book is a "must" for dietitians and physicians interested in diet.

R. J. M.

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Procurement and Assignment Service

WHEN *our* Editor asked me to prepare a "Guest Editorial" for *our* monthly journal, I was most happy to comply with his request, as I have for some weeks had the desire again to make a report of some of the problems of the Procurement and Assignment Service to the members of the medical profession in *our* state. However, I will have to admit I am somewhat at a loss to understand how Dr. Rucker could regard me as a "guest." Perhaps, he considers that I forfeited my rights to citizenship in our state when I became more or less loosely associated with the War Manpower Commission in Washington as Chairman of the Procurement and Assignment Service for Physicians in Virginia.

In this capacity, I have been called most everything during the past several years, but I am not willing to give up the honor of still being considered a Virginian.

The first obligation entrusted to the Procurement and Assignment Service was the obtaining of a sufficient number of doctors to meet the military needs of our country. The determination of the quota of doctors which each state should be required to furnish was necessarily delayed at the beginning of this war. This delay in obtaining a definite quota not only made the work of the Procurement and Assignment Service more difficult than such would otherwise have been, but also provoked some editorials in our newspapers which served to cause unjustified criticism of the Procurement and Assignment Service both in Washington and in Virginia.

This delay was unavoidable, due to many factors beyond the control of any group of men, such as, the then undetermined size of the army and navy, the ratio of doctors to the number of troops, etc. One will recall that about two years ago there was much dispute as to whether we should have an army of one or two million men. Now ten or twelve million men is the figure being debated in our Senate and Congress. With these facts in mind we should now be more lenient in our criticism of this delay.

The Procurement and Assignment Service determines the number of doctors that can be spared from civilian life and, in consultation with the military authorities, estimates

the total number of doctors available and necessary to meet the military needs of the armed forces.

It is also the function of the Directing Board of the Procurement and Assignment Service in Washington to see that no state is required or allowed to compensate for the failure of any other state or states to obtain their alloted quota. In turn, it is, and will continue to be, the duty of each State Chairman of the Procurement and Assignment Service to see that a fair quota comes from each section of the state he represents and that no one section or city imposes on any other portion of the state. Rural communities and the so-called "critical areas" have received especially careful study in Virginia. Some of our cities have not, as yet, furnished as many doctors to the military services as they probably will have to do in the future.

In Virginia it was decided not to wait until a definite and final quota could be assigned to the state, but to obtain all the doctors who could be spared from civilian life without working undue hardship on any community. Reason suggested this course, and experience proved the wisdom of same. After this decision was reached, a tour of the entire state was made, and this resulted in a sufficient number of doctors volunteering to meet the quota of doctors for Virginia up to the present time. What the future requirements will be, no one can definitely state, for no one knows what turns this global war might take.

At present, it looks as if no large number of doctors will be needed for the remainder of the year 1943. There are now eighteen states in the Union, including Virginia, which have apparently filled their quota of doctors for military services for the year 1943, and it is significant that 12 of these states are located south of the Mason and Dixon Line.

There is only one fact concerning the future of which I am certain, and that is the doctors of Virginia will continue to meet any and all calls their country might make on them. Of course, there a few—very few—doctors in our state who in the opinion of the Procurement and Assignment Service apparently have not realized their obligation and duty to their country. To this very small number, the only comment the Procurement and Assignment Service has to make is to inform them that during the past two years we have seen some doctors who did not do what they thought was their duty during the last World War, and who have carried guilty consciences for nearly a quarter of a century, and these men are and have been the most miserable human beings in existence.

It is certainly not the function of the Procurement and Assignment Service of Virginia to tell any doctor what his duty to his country is. That question he, and he alone, can settle for himself. It is the duty and obligation of the Procurement and Assignment Service to give each doctor in this state all the information we have which might be of assistance in helping him estimate his own duty "according to the dictates of his own conscience".

Never before in any democracy has so much power ever been vested in any agency of the government as has been given to the Selective Service System. The future of every man, not only doctors, over seventeen years of age and under thirty-eight years of age rests in the hands of the Selective Service System. Men from thirty-eight to forty-five are also under the authority of Selective Service, but at present this group of men is being deferred.

Selective Service calls on the Procurement and Assignment Service for assistance in determining the availability for military service or essentiality for civilian needs of the doctors within the state. The Procurement and Assignment service acts only in an advis-

ory capacity. I am very glad to be able to state that the relationship between the many local Selective Service Boards of Virginia, the Selective Service System, and the Procurement and Assignment Service has been most cordial and co-operative, due largely to the untiring and tactful efforts of Colonel Mills F. Neal, as well as to the common sense of the various members of the different local boards.

Now that the urgent needs of the military services have been met, more consideration is being given to civilian requirements, though such has always occupied a large part of our attention and our honest efforts in the past. It is now necessary to draft certain doctors to stay at home. If a doctor is under thirty-eight years of age and is considered necessary or essential in his civilian activity, the Local Selective Service Board places him in 2-A. If he is essential to the War Production Program, excluding agriculture, then he is placed in 2-B. Agriculture in this connection does not apply to the doctor who makes his living in the practice of medicine and spends the same supporting a farm. He must be regularly engaged in agricultural pursuits.

In Virginia we have so far been able to utilize the medical ability of doctors who are found to be definitely "conscientious objectors," but how long we will be able to continue to do so is another one of those unknown factors.

Every man's classification must, under the law, be reviewed every six months by his Local Selective Service Board. If a doctor has been classified as necessary for civilian needs, it is necessary to know how much work he can do, what is the condition of his health, and what are the medical needs in the community in which he practices. For these and many other reasons, it is necessary to keep an up-to-date file on every doctor in the state.

There is such a file in the office of each representative of each Congressional district in this state for every doctor in his respective district. A copy of each of these files is also kept up-to-date in the office of the Chairman. Naturally these files are changed frequently, but every effort is made to have the files in the offices of each representative the same as those in the office of the Chairman. While the Chairman leans heavily on the opinion expressed by the various representatives to him, the final responsibility for any decision is his. Therefore any criticism made of any decision should only be made of the state Chairman and never of any of the representatives.

There are certain definite directions given to each state Chairman, and he is required to make his decisions according to these rules. The state Chairman does not make these "rules," but he does review each individual case with the Local Representative of the Procurement and Assignment Service throughout the state. "He calls them as he sees them," and the spectators and players do not always agree with each other or the umpire.

Fairly recently a Mrs. Soule representing Mr. Elmer Davis, Director of Office of War Information, has made a survey of certain "critical areas" in Virginia. I regret a "bad cold" prevented Mrs. Soule contacting your Chairman except over long-distance telephone. She did, however, have conferences with Dr. Julian Rawls of Norfolk and Dr. O. T. Amory of Newport News and groups of laymen in these two cities. Her report will be awaited with much interest, for sometimes it is helpful to see how the public views our professional problems.

In the latter part of 1942, there were four laymen added to the already established Advisory Committee of the Procurement and Assignment Service of Virginia. They are Mr. Homer Ferguson, President of the Newport News Ship Building Company; Mr. W. J. Jenks, President of the Norfolk and Western Railway Company; Dr. Lloyd Newcomb, President of the University of Virginia; and Mr. O. C. Moore, Assistant Commissioner of Labor. It is a great comfort to your Chairman to know he can call

on these gentlemen for advice in matters pertaining to the different fields of endeavor they so well represent.

As all the Representatives are over 45 years of age and most of them have had previous military service, they are able and willing to be of assistance to any of the younger doctors who are mentally disturbed concerning military problems. There have been a few cases where, for some reason, some doctor preferred to discuss his situation with the state Chairman. I hope no one has found me unavailable or unsympathetic.

The relocation of doctors both within and from without this state is now one of our acute problems, but one that is well in hand.

The location of the refugee doctors presents many difficult angles, but these are being met with the assistance of the various Local Selective Service Boards, the Board of Medical Examiners of the State of Virginia, and the National Committee for Resettlement of Foreign Physicians.

The policy of these various committees is largely to place these foreign doctors in rural communities or situations where it is impossible to locate American citizens. The refugee doctors are only so located for the duration of the war or until they become American citizens.

Analysis of the medical school lists of "essential teachers" for the current academic year shows that, to July 1, 1942, 21 per cent of the physicians on medical school faculties were in the Army or Navy service, as compared with 12 per cent of all physicians in the United States. In addition, the medical schools listed as "available 25 per cent of the physicians of military age remaining on their staffs".* From this record, I believe it is safe to assume our medical students throughout this country are receiving proper education as regards their duty to their country in time of war.

There are 412 doctors from Virginia now in the military services of our country, which is about 14 per cent of all doctors in Virginia.

In closing, let me state in all sincerity and all frankness, there is no doctor in our state who has a higher opinion of the members of the medical profession in the State of Virginia than I have. I am certain this high opinion is due to the fact that I have on file in my office an immense amount of information concerning the activities and lives of 2,893 doctors who reside in our Commonwealth. For this, I am deeply grateful to those representatives who have served so faithfully and effectively, as well as to the entire medical profession who have exhibited such a fine spirit of loyalty to their country that their record is the envy of many other states of the Union.

H. H. TROUT, M.D., *Chairman,*
Procurement and Assignment Service
for Physicians in Virginia.

Our Exchanges

ONE of the pleasant duties of the editor is to look over the exchanges that come to his desk. It gives us a good idea of what is going on in the medical world. We were particularly pleased at the complimentary notices of the VIRGINIA MEDICAL MONTHLY that appeared in a number of journals on the occasion of our former editor's resignation. War news and war medicine and surgery occupy many pages, as is to be expected. A fair amount of space is given to social and economic problems, and a

*Quoted from "Medical Education and the Procurement and Assignment Service" by Dr. Harold S. Diehl, published in February 27 issue of the "The Journal of the A. M. A."

EDITOR'S NOTE. Since Dr. Trout objects to the place of honor accorded to the *guest* editorial, his essay has been moved to the back of the MONTHLY and made the leading editorial.

surprisingly large amount is devoted to discussing the problems of medical education. It is quite evident that the medical profession is backing the war effort 100 per cent. Then, too, there is a more wide-spread interest in obstetrics than ever before.

There are some empty places on our table. Some Journals have had to suspend publication for the "duration" because the staff had gone to war. Some have become thinner and some, particularly the British, are printed on poorer paper, but we cherish them all the more for their struggle to "carry on". Recently, a new one put in its appearance, "Voks Bulletin 1942", published in Moscow by the U. S. S. R. Society for Cultural Relations with Foreign Countries. There is a short preface by J. Stalin which I quote in full: "Only professional swindlers can assert that the German fascists, who have covered Europe with gallows, who are pillaging and outraging the peaceful population, who are setting fire to and blowing up cities and villages, and destroying the cultural values of the peoples of Europe, can be bearers of European culture, and the German army is an army of medieval obscurantism, whose function it is to destroy European culture for the sake of implanting the slaveholders' culture of the German bankers and barons." The magazine supports this theme with pictures of the museum-homes of Tolstoi in Yasnaya Polyana, Tsiolkovsky in Kaluga, Tchaikovsky in Klin, and Chekhov in Istra, before and after the occupation by the Germans. The fascists also destroyed the monument to the Ukrainian poet, Taras Shevchenko, and numerous Russian cultural monuments. That the Russians had great names in literature, science, and music, is well known; that they love and cherish their memory, and that they bitterly resent the ruthless and unnecessary destruction of their shrines is quite evident from this magazine.

But we started this editorial on account of four special issues. The first of these in point of time is the Banting Memorial number of the *Canadian Medical Association Journal* (November 1942). It has been twenty-one years since Sir Frederick Banting gave insulin to the world and November is the month in which he was born. The papers in the memorial section of the issue indicate in some measure the great variety of subjects whose investigation Sir Frederick made possible, not only by his own achievements, but by the direct stimulation of his wide-ranging mind. Reminiscences by C. H. Best with reproduction of pages from their note-books, reproduction of some of the landscapes that Sir Frederick painted when on his vacations in the North Country, an article on the contribution of Sir Frederick Banting to silicosis research, as well as several articles from the Banting and Best Department of Medical Research of the University of Toronto, give some idea as to the wide interests of the man. Besides, he had developed a skill in wood-carving, was intensely interested in early Canadian history, and had a collection of rare old Canadian and Indian relics.

This year's Blue Book of the *Wisconsin Medical Journal* (January) has a section on the history of the hundred years of the Wisconsin State Medical Society, a section on medical economics, and one on the physician at war. The State Society was organized in 1841 by the authority of Act 53 of the Territorial Legislature. The activities of the Society in the next 100 years is given in attractive chronological form. It is interesting to see that the Civil War interrupted the Society's activities. The section on economics contains an up-to-date discussion of the State and Federal tax laws, as well as laws that have to do with various medical activities, such as premarital examinations and the care of the illegitimate child, all of which are adequately indexed. The third section gives advice to the doctor who is going into the Armed Service; from what to do with his practice to how to care for his life insurance. One can but admire the completeness of the 1943 Blue Book.

The Twenty-fifth Anniversary number of *Minnesota Medicine* gives a summary of

the advances for the past twenty-five years in the various fields of medicine from anesthesia to obstetrics. We were especially pleased with the tribute that Lundy pays to the late R. E. Farr. For ten years we have missed his genial red head at the medical meetings, but we still remember his teachings in regard to local anesthesia and his emphasis upon the need of extreme gentleness in handling the tissues, and his ingenious instruments that would guarantee this gentleness.

Finally, the January number of the *Medical Annals of the District of Columbia* commemorates the 125th anniversary of the Medical Society of the District of Columbia. On its cover it carries a very attractive picture of William Thornton, M.D., architect of the United States Capitol building. According to the interesting history of the Society by Arthur C. Christie, Thornton joined the Society in 1819 and was its vice-president, 1820-1823. Among other distinguished members of the Society are mentioned J. M. Toner, S. C. Busey, E. Y. Davidson, W. C. Woodward, and Gerry Morgan. A list of those who have contributed to the programs of the Society sounds like a roll of the great names in American medicine, from Philip Syng Physick and John Collins Warren to W. F. Grenfell of Labrador. In 1895, for instance, the Society was addressed by Surgeon-General George M. Sternberg, Charles Wardell Stiles, William Osler, Major Walter Reed and Abraham Jacobi. But more important are the Society's efforts in behalf of pure drinking water, a pure milk supply, the safe-guarding of viruses, antitoxins, and analogous products, the antituberculosis battle, and in the study of maternal deaths, as related in Dr. Christie's article.

Medical Circular No. 3 of the Selective Service System

THE purpose of this circular is to guide physicians and dentists in the preliminary physical examination of registrants "to the end that all selectees will be physically examined and processed locally in like manner". The object of the examination is to disqualify locally all registrants who have obvious disqualifying lesions. In some instances registrants have been forwarded to recruiting and induction stations who had only one leg, a draining urinary fistula or marked deformities of advanced Pott's disease. Circular No. 3 stresses the importance of examining the registrants *in the nude* and *in action*. It also stresses the regulations that the preliminary physical examinations *be given only by a physician*. It seems that some have erroneously contended that because the examination consisted solely of inspection, it could be given just as effectively by a lay member of the local board.

The editor reads between the lines that many of the examining physicians who have been practicing modern, streamlined medicine, have become so dependent upon x-ray and other laboratory diagnostic measures that they undervalue their powers of observation. If that be the case, the Selective Service physicial examination offers a wonderful opportunity to re-educate several of their five senses.

In the preface of the circular General Lewis B. Hershey, the Director of the Selective Service System, expresses his appreciation of the loyal and valuable professional service that the examining physicians and dentists have been and are rendering. This view is shared by all who know the work these men are doing. In a personal communication, Colonel L. G. Rowntree, Chief of the Medical division, says "Selective Service is much impressed with the devotion and the patriotism of its examining physicians and dentists. As you no doubt know these professional men in Selective Service are making the preliminary examination of registrants who are to be inducted into all branches of the military service. This represents a national service of great magnitude and importance."

Department of Clinical and Medical Education

Institute on Industrial Medicine.

During the week of March 22 a one day Institute on Industrial Medicine was held in Newport News, Norfolk, Portsmouth, Suffolk, and Petersburg. Reports indicate that, considering wartime conditions in Tidewater Virginia, the interest and attendance were very gratifying to the Committee on Industrial Health and the Department of Clinical and Medical Education which arranged the program. There were 55 doctors present at the meeting in Newport News, 20 in Portsmouth and 40 in Petersburg. The complete program was as follows:

NEWPORT NEWS, MARCH 22

Program sponsored by the Virginia Peninsula Academy of Medicine with the cooperation of the Warwick County Medical Society and the Elizabeth City County Medical Society.

Dinner Session—Dr. W. A. Colton, President Virginia Peninsula Academy of Medicine, presiding.

1. Industrial Medicine Today—Dr. Orlen J. Johnson, Field Secretary, Council on Industrial Health, American Medical Association.
2. Industrial Medicine—Dr. W. L. Weaver, Medical Director, DuPont de Nemours Co., Ampthill Plant.
3. Occupational Dermatoses with Special Reference to the War Industries—Dr. John E. Dunn, P. A. Surgeon, Dermatoses Investigations Section, United States Public Health Service.

NORFOLK, MARCH 23

Program sponsored by the Norfolk County Medical Society.

Afternoon Session—Dr. A. B. Hodges, President, presiding.

1. Industrial Medicine Today—Dr. Orlen J. Johnson.
2. Compensation—Dr. H. U. Stephenson, Medical Advisor, Industrial Commission of Virginia.
3. Trauma: Shocks & Burns—Dr. I. A. Bigger, Surgical Staff, Medical College of Virginia.
4. Industrial Medicine—Dr. W. L. Weaver.

Evening Session—Dr. A. B. Hodges, presiding.

1. Tuberculosis Program in Industry—Dr. E. C. Harper, Director Tuberculosis Control Program, Virginia State Department of Health.
2. Occupational Dermatoses with Special Reference to the War Industries—Dr. John E. Dunn.
3. Medical Services of the United States Navy in World War II—Commander B. W. Hogan (MC), United States Navy, Recently Senior Medical Officer U. S. Navy Carrier *Wasp*.

The programs in the following cities were identical except for the changes in speakers indicated.

PORTSMOUTH, MARCH 24

Sponsored by the Portsmouth Medical Association, Dr. R. L. Corbell, President, presiding at all sessions.

SUFFOLK, MARCH 25

Sponsored by the Nansemond County Medical Society, Dr. James Habel, presiding at afternon session; Dr. E. C. Joyner, President, presiding at dinner and evening sessions.

PETERSBURG, MARCH 25

Sponsored by the Fourth District and Southside Virginia Medical Society and the Petersburg Medical Faculty, hosts for the dinner session.

Dr. T. S. Jennings, First Vice-President, Fourth District and Southside Virginia Medical Society, presiding at afternoon session.

Dr. P. L. Hill, President, Petersburg Medical Faculty, presiding at dinner session.

Dr. B. H. Knight, President, Fourth District and Southside Virginia Medical Society, presiding at evening session.

Afternoon Sessions.

1. Industrial Medicine—Dr. W. L. Weaver, Medical Director, DuPont de Nemours Co., Ampthill Plant. (At Petersburg Only—Dr. H. S. MacLean, Chief Medical Officer, Virginia Electric and Power Co.)
2. Compensation—Dr. H. U. Stephenson, Medical Advisor, Industrial Commission of Virginia. (At Portsmouth only—Col. Parke P. Deans, Chairman, Industrial Commission of Virginia.)
3. Trauma: Shock & Burns—Surgical Staff, Medical College of Virginia. (At Portsmouth—Dr. M. J. Hoover.) (At Suffolk—Dr. J. M. Meredith.) (At Petersburg—Dr. James T. Tucker.)
4. Tuberculosis Program in Industry—Dr. E. C. Harper, Director, Tuberculosis Control Program, Virginia State Department of Health. (Except at Petersburg.)

Dinner Sessions.

1. Occupational Dermatoses with Special Reference to the War Industries—Dr. John E. Dunn, P. A. Surgeon, Dermatoses Investigations Section, United States Public Health Service.
2. Treatment of War Wounds—Commander J. M. Deaver, United States Naval Hospital, Naval Operating Base, Norfolk.

The Committee on Industrial Health and the Department of Clinical and Medical Education will be glad to arrange similar programs on Industrial Medicine for component societies in other parts of the state. It has been suggested that future programs be confined to a dinner and evening session but the wishes of local societies will be followed in each case. Societies wishing to arrange a program should communicate with the Executive Secretary.

GEORGE B. ZEHMER,
Executive Secretary.

Societies

The Medical Society of Northern Virginia

Held its regular meeting at Front Royal on April 13, under the presidency of Dr. D. M. Kipps of that place. Dr. J. E. Harris of Winchester is secretary and Dr. C. O. Dearmont of White Post, vice-president.

The scientific program consisted of the following papers:

Thyroid Conditions—Dr. P. W. Boyd, Winchester

Virus Pneumonia—Dr. W. E. Lynn, Front Royal

The Transportation of Fractures—Dr. H. I. Pifer, Winchester

The Value of Adequate Nutrition in Surgical Cases —Dr. Leslie M. Bell, Winchester

Burns—Dr. W. H. Parker (*invited guest*), Charlottesville.

Upon completion of this program, the members adjourned for luncheon.

Lynchburg Academy of Medicine.

The meeting of the Academy on March 1 was devoted to a discussion of a type of low cost prepaid surgical benefit plan, concerning which an Academy committee has been functioning for four years. The idea is to provide adequate care for workers in Lynchburg, particularly those of the lowest income group, and it is probable that some satisfactory plan may be sponsored by the Academy in the near future. In connection with this, there appears in this issue of the MONTHLY a paper presented the Academy at this meeting, by Francis I. Libby, general manager of Piedmont Hospital Service Association, an organization which has been functioning successfully in Lynchburg for several years.

Officers of the Lynchburg Academy of Medicine, whose service began January 1, are: President, Dr. S. H. Rosenthal; president-elect, Dr. P. B. Echols; vice-president, Dr. S. O. Handy; secretary-treasurer, Dr. L. R. O'Brian, Jr. All are of Lynchburg.

Danville Academy of Medicine.

The following have been elected as officers of the Academy to serve for the duration: President, Dr. J. J. Neal; vice-presidents, Drs. S. Newman and R. W. Garnett; and secretary-treasurer, Dr. P. W. Miles, all of Danville.

The Tazewell County Medical Society

Held its regular meeting on March 11th. The program was a round table discussion of the efforts and aims of the State and Local Health Units. Dr. E. C. Harper, Richmond, spoke on Public Health Means Regarding Tuberculosis Control; Dr. H. M. Kelso, Abingdon, explained the workings of the Maternal and Child Health Program; and Dr. Paul Bundy, Grundy, told of the set-up for Venereal Disease Control.

MARY E. JOHNSTON, *Secretary.*

Norfolk County Medical Society.

At the regular meeting on April 19th, Commander J. M. Deaver, U. S. Naval Operating Base, Norfolk, spoke on "Treatment of Wounds".

Patrick-Henry Medical Society.

At the regular meeting of this Society on April 9, in Martinsville, Dr. Nelson Mercer of that city was unanimously elected to membership. Dr. John A. Shackelford, also of Martinsville, gave a descriptive lecture on the surgical treatment of varicose veins.

Roanoke Academy of Medicine.

At the meeting of the Academy on April 5, the following program was presented:

The Story of Insulin by Dr. C. H. Best, co-discoverer of insulin, University of Toronto, Toronto, Canada.

Recent Advances in Navy Medicine by Rear Admiral Luther P. Sheldon, chief of the Bureau of Medicine and Surgery, Navy Department, Washington.

These speakers were guests of the Gill Memorial Hospital Spring Graduate Course.

News

Titles for Papers at State Meeting.

Requests have been sent members of the Medical Society of Virginia for titles of papers to be presented at the annual meeting in Roanoke, October 25-27. If you wish to present a paper and have not sent in your title, do it at once. Don't forget the short abstract which must accompany this. June 1st is the deadline!

Medical College of Virginia News.

A grant of $28,630 has been received from the General Education Board with which to make an experimental study of curriculum content, organization, and related matters in the field of nurse education. Severely objective techniques will be employed. The first consideration will be to make an activity analysis of what science the nurse uses in practice to determine core material, this to be enriched in the development of integrated science instruction for nurses. Many special studies are contemplated during the four and a half or five years these experimental studies will run. Special personnel for the study will be brought in from the outside, including an advisory committee selected on a national basis.

Reverend George Ossman, rector of The Monumental Church, adjoining the buildings of the hospital division, has completed a two months' course in Boston and New York for hospital chaplains. Shortly, he will take up such duties with the college hospitals, spending the morning routine in this work and available in the afternoon on special call. As far as known this is the first program of this sort to be launched in this area, although among the larger hospitals of the north it is recognized as a necessity. Mr. Ossman will also coordinate the spiritual activities of the hospital division regardless of denominations and faiths. This program has had the staunch support of the Richmond Ministerial Association and others of the community vitally interested. This arrangement is a part of a plan of closer cooperation with The Monumental Church, involving several important exchanges of services.

A symposium on nutrition was held on March 24, 25 and 26, in cooperation with the State Nutrition Committee, at which registration numbered five hundred fifty, with probably one hundred in attendance at one time or another who did not register. Eleven states were represented in the registration. Prominent speakers on the program were: Dr. Virgil P. Sydenstricker, professor of medicine, University of Georgia; Dr. W. H. Sebrell, Surgeon, United States Public Health Service; Dr. Lydia J. Roberts, chairman, Department of Home Economics, University of Chicago; Brigadier General J. Fulmer Bright, Director of Office of Price Administration of Virginia; and Miss Bertlyn Bosley, Research Student in Nutrition, Teachers College, Columbia University.

Dr. Clair R. Spealman, assistant professor of physiology, recently resigned to enter the armed services. Dr. Spealman has been replaced by Dr. E. L. Smith of the University of Chicago. Mr. Norman L. Pinschmidt of the University of Maryland has also joined the department of pharmacology as assistant.

Dr. Porter P. Vinson, professor of esophagoscopy, bronchoscopy and gastroscopy, recently spoke before the Southeastern District of Columbia Medical Society on the Treatment of Dysphagia, with particular reference to hiatal esophageal hernia.

Dr. E. I. Evans, assistant professor of surgery, attended the "war sessions" of the American College of Surgeons at Charlotte, North Carolina, giving a talk on plastic surgery.

Dr. Edward J. Van Liere, dean of the school of medicine, West Virginia University, was a recent college visitor.

American Medical Association.

As announced sometime ago, there will be no scientific assembly of the Association this year, but the House of Delegates will meet in regular session at the Palmer House in Chicago, beginning Monday, June the 7th, and function as usual. The President-elect will be installed as President in the ball room of the hotel at a meeting at 8:00 P. M. on Tuesday, the 8th.

Major Harry J. Warthen, M.C.,

Of Richmond, now stationed at Atlantic City, N. J., with the U. S. Army Air Forces, represented this

Service at the War Sessions meetings of the American College of Surgeons held at Buffalo, Boston and Brooklyn in March.

Dr. and Mrs. T. H. Worrell

Have returned to their home "Azaleadell" at Hillsville, after a visit to Mexico where they spent the winter. Dr. Worrell reports that on February the 21st they experienced the most severe earthquake Mexico has had for thirty years, and visited the new active volcano, "San Juan Parangaricutiro", when it was nine days old. This is sixteen miles from Uruapan and three hundred miles from Mexico City. The volcano was building up about 100 feet per day, and averaged explosions sixteen times a minute, boulders weighing tons going high in the air. A month later, it was estimated the base would cover a square mile and, 100 miles away, at Morelia, one could write his name on the street in ashes from the volcano.

Promoted in Army Medical Corps.

Dr. Kenneth N. Byrne of Lexington and Dr. R. C. Allison of Petersburg, both of whom entered the Service early in 1941, have recently been promoted to the rank of Major. Major Byrne is now stationed at Ft. Jackson, S. C., where he is chief of the medical service in his unit, and Maj. Allison is at Ft. Hancock, N. J.

Dr. Herman F. Oppleman of Richmond has recently been promoted to the rank of captain. He is on foreign duty.

Dr. A. A. Davis,

Formerly of Radford, has opened offices at 1726 Eye Street, N. W., Washington, where he will be engaged in general practice. About May 15th, he will have an uptown office at 6601 Thirteenth Street, N. W.

Married.

Dr. Bernard Kyle Mundy, Lynchburg, and Miss Marjorie Jane McKee, Chanute, Kansas, March 25th. Dr. Mundy is a graduate in medicine from the University of Virginia in 1939 and is now serving a residency at Johns Hopkins Hospital, Baltimore.

Dr. Charles Gravely Young, Roanoke, and Miss Loreta Lybrook, Fincastle, April 10th. Dr. Young is a graduate of the class of 1943 of the Medical College of Virginia and is serving his internship at the College Hospitals.

Dr. Armistead Page Booker, New Castle, Del., and Miss Elizabeth Ann Morris, Welch, W. Va., April 3rd. Dr. Booker received his medical degree from the University of Virginia in 1943 and is serving his internship at the University Hospital.

Lt.-Col. Seth Gayle, Jr., M. C., Richmond, and Miss Annie Laurie Thigpen, Atlanta, Ga., April 2nd. Dr. Gayle is an alumnus of the Medical College of Virginia and is at present stationed at Fort McPherson, Ga.

Dr. Russell Nelson Snead, Midlothian, and Miss Frances Elizabeth White, Schuyler, April 10th. Dr. Snead graduated from the Medical College of Virginia, class of 1943, and is serving his internship at the Norfolk Naval Hospital, Portsmouth.

Dr. Nathaniel Clayton Ewing and Miss Mary Virginia Kennedy, both of Charlottesville, April 8. Dr. Ewing is a graduate of the Medical College of Virginia, class of '40, and has been on the staff of Blue Ridge Sanatorium.

Dr. Franklin McCue Hanger, Jr., and Mrs. Harriet Echols Ewing, both of New York City but formerly of Staunton, Va., April 16.

Officers of Children's Memorial Clinic.

Dr. Manfred Call, III, has been elected President of the Children's Memorial clinic, Richmond, succeeding Dr. Charles Outland. Dr. Howard Masters has been named vice-president, and Dr. Harvie DeJ. Coghill is clinic director and secretary.

Dr. I. C. Riggin,

State Health Commissioner, was elected President of the State and Territorial Health Officers' Association at the meeting held in Washington in March. This organization is composed of health officers of all of the States and Territories of the United States, and the meetings are for the purpose of discussing current health problems and adopting public health policies on a nation-wide basis.

Dr. R. W. Miller Honored.

At a meeting of the Richmond City School Board on April the 23rd, a photographic portrait of Dr. Roshier W. Miller was unveiled by his grandson, Roshier Williams, and will hang on the wall in the board room. This honor was paid Dr. Miller by members of the School Board in recognition of his service of twenty-three years on the Board and his fifteenth anniversary as its chairman.

National Health Honor Roll.

The names of 33 cities and counties in 18 states winning awards in the 1942 National Health Honor Roll Contest have been announced by the United States Chamber of Commerce and the American Public Health Association. These awards are made to communities which have provided community health protection against the spread of tuberculosis, venereal and other communicable diseases, have maintained protective educational services for mothers and children, and safeguards against the dangers in war industries, and have protected milk and food supplies and general sanitation of water supplies and sewerage disposal.

It is interesting to note that among the counties to receive this award is Arlington County, Virginia.

Ciba Pharmaceutical Products, Inc.,

Announces that Mr. J. J. Brodbeck has been elected its President. He formerly served the company as executive vice-president and general manager.

"Chemotherapy of Malaria",

A review of the biological and statistical background of malaria and of the literature on antimalarial chemotherapeutic agents by Dr. James H. Williams, has been published by the Lederle Laboratories, Inc. Any research worker in the malarial field may obtain a copy, without charge, by sending his name, position and connections, to Lederle Laboratories, Inc., 30 Rockefeller Plaza, New York City.

The Seaboard Medical Association

Of Virginia and North Carolina will hold its 48th annual meeting at the Jefferson Hotel, Richmond, November 30 and December 1-2, 1943. Dr. C. Lydon Harrell, Norfolk, is president, and Dr. Clarence Porter Jones, Newport News, secretary-treasurer.

For Sale—

Six gallon porcelain tank; 30 milli-ampere self rectified Kelley-Koett machine complete with hand timer and overhead high tension system. Address "Tank-Machine", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

Location Wanted

By draft exempt, well educated and experienced physician. Licensed in Virginia and the District of Columbia. Would like private or industrial practice. At present employed. Address "Physician", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Benedek & Rubenstein—The sexual cycle in women.
Boyd, W. C.—Fundamentals of immunology.
Chenoweth & Morrison—Community hygiene.
Gellhorn, E.—Autonomic regulations.
Hadfield & Garrod—Recent advances in pathology. 4th edition.
Hamilton, B. E.—The heart in pregnancy and the childbearing age.
Irving, F. C.—Safe deliverance.
Jones, H. W.—Green fields and golden apples.
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Orias, O. & Braun-Menendez, E.—The heart sounds in normal and pathological conditions.
Ray, M. B.—Doctors of the mind—the story of psychiatry.
Salle, A. J.—Fundamental principles of bacteriology with laboratory exercises.
Samuels, S. S.—Diseases of the peripheral arteries.
Science and man. Symposium.
War medicine.
Webster, E. T.—Rabies.
Whitney, D. D.—Family treasures.

Obituaries

Dr. Benjamin Hughes Gray,

Prominent Richmond obstetrician, died at his home in this city, on April 15. He was sixty-four years of age and studied medicine at the former University College of Medicine, Richmond, from which he graduated in 1903. Following this, Dr. Gray served an internship at the Marine Hospital in New York, after which he had special training in obstetrics in several New York hospitals before returning to Richmond in 1914. He was vice-president of Stuart Circle Hospital, professor of clinical obstetrics at the Medical College of Virginia, and was active in a number of civic and professional organizations. He had been a member of the Medical Society of Virginia since locating for practice in this State. His wife and two children survive him.

Dr. John Edward Loyd,

For over thirty years practicing physician for the Natural Bridge Station community, died at a Lexington hospital on March the 5th. He was a native of Roanoke County and sixty-seven years of age. Dr. Loyd studied medicine at the University of Virginia, from which he graduated in 1901, and was connected with the staff of the Chesapeake and Ohio Hospital at Clifton Forge for ten years before locating for private practice. He had been a member of the Medical Society of Virginia for about twenty years and was also a Mason. He is survived by his wife, mother, two sons and a large family connection.

Dr. William F. Kellam,

Well known physician of the Eastern Shore, died at his home at Onley, on March 30, at the age of sixty-three. He was graduated in medicine from Johns Hopkins University in 1906. Dr. Kellam was formerly a member of the Medical Society of Virginia, a member of the State Commission of Fisheries, and a Mason. He had always taken an active part in the civic affairs of his community. His wife and a daughter survive him.

Dr. Josiah Leake,

Churchland, died at his home there on April the 17th, at the age of sixty-two. He graduated in medicine from the former University College of Medicine in Richmond in 1908 and was for sometime a resident of Ashland. His wife and a brother survive him.

Dr. Albert Hammond Hoge,

Bluefield, W. Va., died April 8th. He was born in Giles County, Va., in 1885, and graduated from the former University College of Medicine, Richmond, in 1908. Dr. Hoge was a former president of the West Virginia State Medical Association and was at one time a member of the Medical Society of Virginia. His wife and a daughter survive him.

Dr. John O'Brien, Jr.,

Hampton, died April 2nd, following a brief illness. He was sixty-six years of age and a graduate of the Medical College of Virginia in 1901. Dr. O'Brien was a veteran of World War I and, upon his return to this country, practiced in West Virginia until his retirement. He was formerly a member of the Medical Society of Virginia.

Resolutions on Dr. Peters.

The Lynchburg Academy of Medicine, Inc., hereby desires to enter in the permanent records of its proceedings the following resolutions on the passing from this life of one of its most active and honored members, Dr. Don Preston Peters. These resolutions being conceived in the spirit of deepest sincerity represent an humble expression of esteem and altogether inadequate tribute to his memory.

WHEREAS our Lord in his infinite and infallible wisdom has taken from our mist Dr. Don Preston Peters in the sixty-sixth year of his life.

BE IT RESOLVED that the members of the Lynchburg Academy of Medicine reverently mourn the passing of one of our most active and beloved members, a man who was fully aware of the dignity and immortality of the human soul and whose chief endeavor in the practice of his high calling was the elevation of human suffering, a man who in the last great war guided solely by the dictates of his own conscience volunteered and whole-heartedly served in the Medical Corps of the Armed Forces of his country throughout most of the period that the United States was in this great conflict.

BE IT RESOLVED that in the last quarter of a century he served this community faithfully and well as a Christian gentleman with great firmness of purpose as a charitable, conscientious and skillful surgeon and in these last years did so often at the expense of his own comfort and health. His ministry was to all stations in life, to rich and poor alike. Notwithstanding he still always found time to lend his influence actively in the administration of the affairs of his church and community.

BE IT RESOLVED that he was a man of principles and enviable ideals who always tenaciously fought to uphold and elevate the practical, moral and ethical standards of his chosen profession, of the hospitals of this city, of the Lynchburg Academy of Medicine, and of his community. If ever he was in error surely it may be said that the mistake was one of judgment and not of the heart; and that all who knew him well were conscious of the fact that he was immeasurably agonized by the resumption of world wide strife and that up until the time of his death his heart was torn between what he believed to be his duty to his family, friends and community and a great desire and longing to be of help in some way in relieving the suffering and carnage now being perpetrated on humanity throughout the world.

BE IT FINALLY RESOLVED that all physicians here represented extend their heart-felt sympathy to his family in their bereavement and that we ourselves of the Lynchburg Academy of Medicine have suffered a great loss and may not soon find one to fill his chair so suddenly left vacant.

Respectfully submitted,

L. R. O'BRIAN, JR., *Chairman*
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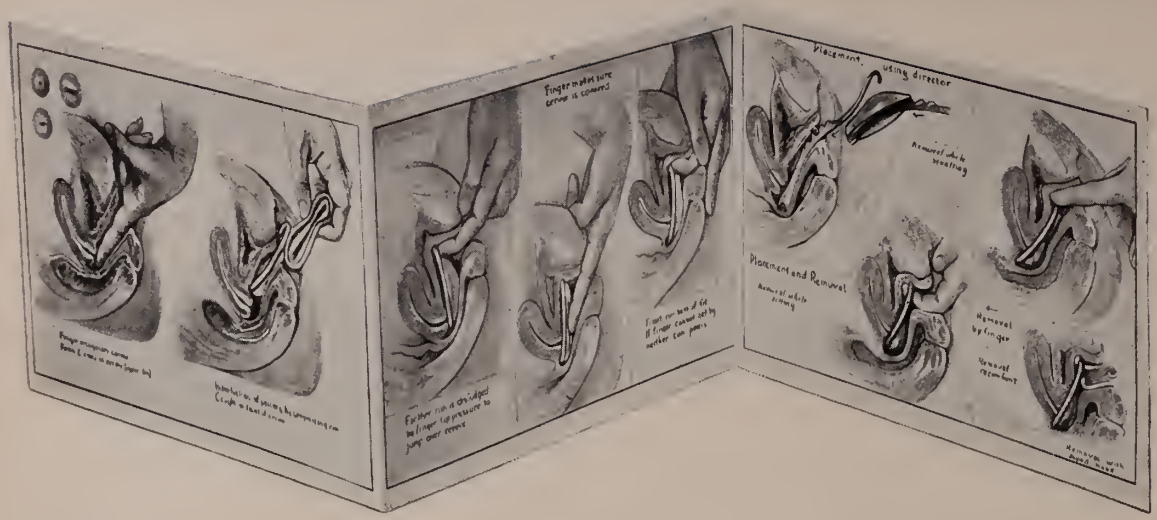

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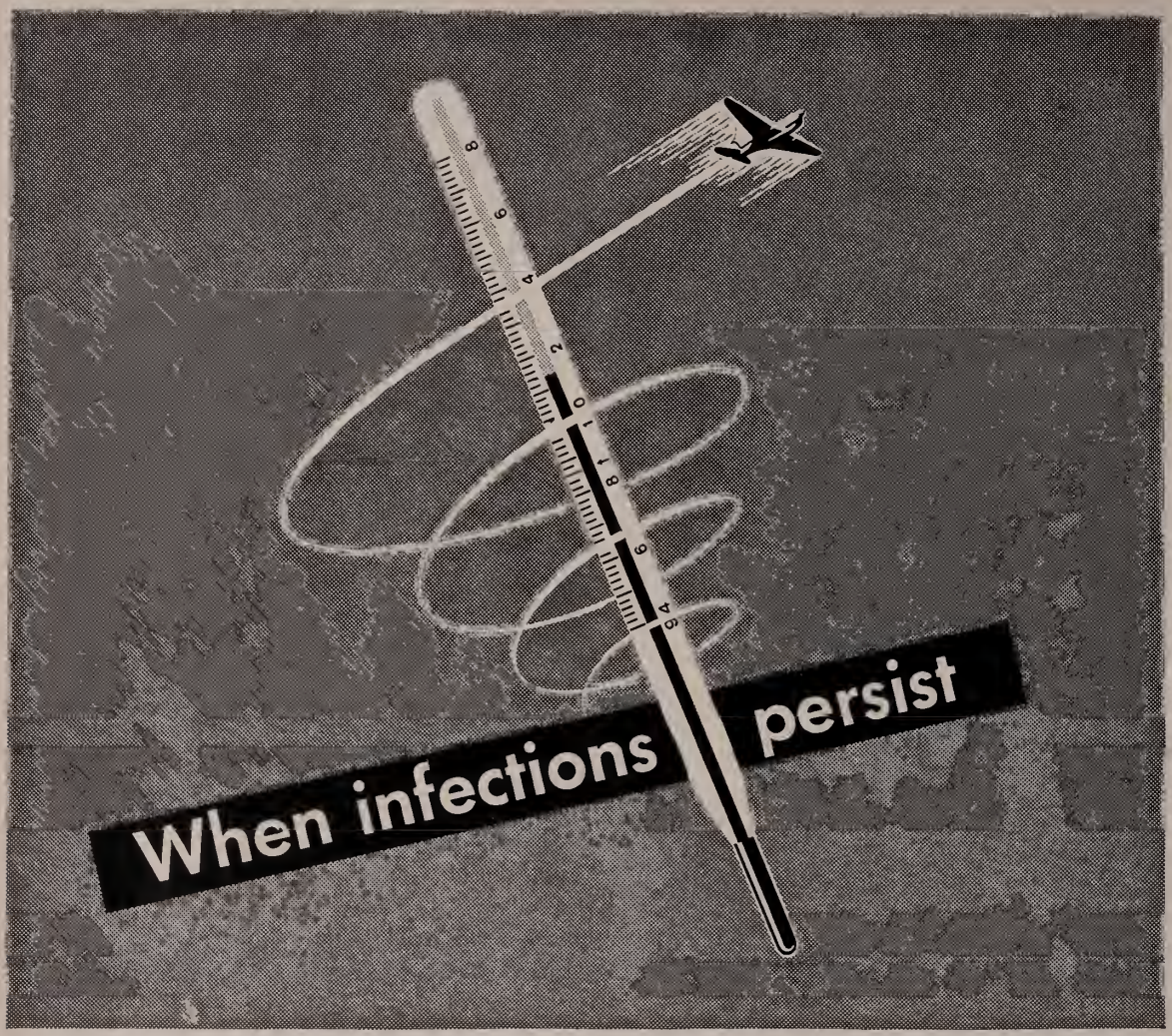

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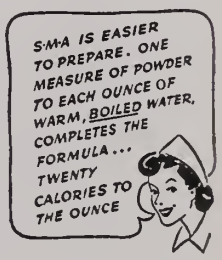

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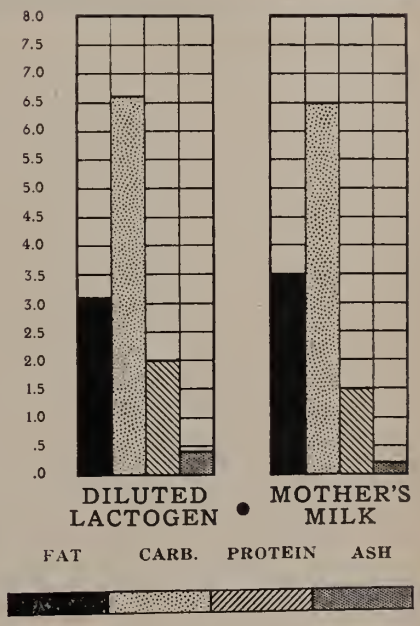

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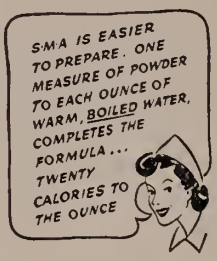

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Official Publication of the Medical Society of Virginia

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WHOLE No. 1092.

RICHMOND, VA., JUNE, 1943.

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Guest Editorial

Post War Medicine

THE last 25 years has been known as the magic quarter century in medicine. In no other similar period have so many advances been made in the unending warfare against disease and its sequelae. These revolutionary changes had their roots only in part in World War I as the ground work of these developments was already in the making long before hostilities began. The same observation can likewise be made on the present medical status in relation to the ensuing conflict. Theories and newer methods of procedure often languish in the laboratories until opportunity arises of sufficient magnitude to test their worth. Military hospitals and battle fields are, therefore, proving grounds for scientific advancement. Many such achievements by the warring nations are well known. The Russians have made outstanding contributions in the treatment of brain injuries as well as the localization of foreign bodies. The British have increased our knowledge of nutrition and doubtless the Germans, at a later date, will give a creditable account of their researches during this period.

American Medicine wrote a praiseworthy chapter at Pearl Harbor. Following this attack infection was almost nonexistent among the casualties and no amputations were made because of infected wounds. As an illustration of the rapid progress in chemotherapy it is interesting to follow the most recent development. In 1929 a certain Mold, Penicillium notatum, was developed. It manufactures a substance which checks the multiplication of gram positive bacteria. This new agent is many times more active than the sulfonamide drugs and is now being used in the treatment of staphylococcal and streptococcal human infections. While still in the experimental stage it is hoped that with improvement in methods of production this effective therapeutic measure may become widely available in civilian as well as military life. Reports today indicate that fatalities from navy casualties have been reduced from 5 per cent in the war of 1917-18 to approximately 1 per cent now. The low mortality from pneumonia, meningitis and other infectious diseases as found in our military hospitals is equally gratifying. These startling facts are harbingers of a new era in civilian medical service following the termination of this conflict.

The Post War era will see a rapid development of Industrial Medicine and Aviation Medicine. In these comparatively new branches special training will be mandatory to meet the peculiar problems in their respective spheres. It will be incumbent upon our medical schools to provide courses for these essential fields of endeavor.

Industrial plants have borne a heavy overhead because of casualties and loss of man hours due to sickness. They will welcome more exacting methods of prevention not only from a humanitarian point of view but also from the monetary angle.

Aviation Medicine is still in its swaddling clothes and it is too early to measure its

mature stature. However, all are familiar with the great stimulus that the global warfare has given to the development and perfection of the airplane. The rate of speed and height of flying have imposed such a strain on the human mechanism that life cannot exist under these environments without adequate protection. At altitudes of 25 to 30 thousand feet the oxygen pressure falls to such a low point that anoxemia quickly develops. At 40 thousand feet even the breathing of 100 per cent oxygen fails to meet the needs of the situation. The modern airplane, however, is capable of reaching heights considerably in excess of this level. Speed is likewise responsible for a variety of sudden changes in the equilibrium of the body. These changes are capable of causing great disturbances of function which are manifested in the different tissues of the body, particularly the soft supporting tissues, the bony tissues and the organs suspended within the body cavity. With the rapid shifting of the position of the body fluids, vascular lesions and cerebral anemia accompanied by a diminished visual acuity may readily follow. Practical questions of importance have arisen from the necessity of protecting aviators from cold and exposure encountered at extremely high altitudes. These problems now concern chiefly the military needs but in the Post War era Aviation Medicine is destined to play no minor part in meeting the challenge for this new field of endeavor.

From present indications it appears that in the war zone one of the greatest problems of the Medical Corps is not infection but the ravages of communicable diseases. Although the ancient plagues of armies are today much less prevalent and better knowledge exists for their effective control nonetheless their potential dangers cannot be overlooked. Malaria is a case in point. Surgeon General Parran recently stated, "outside of mental diseases there is no other disease of comparable importance against which we have made less progress during my generation". With large numbers of our men returning from infected areas and the epidemiologic factor confronting us from rapid air transportation widespread malaria in our country is a potential menace. This may well be true also of our Post War period.

One of the most auspicious auguries for the public welfare is the present interest in the extension of Public Health Coverage to the entire nation. Already the House of Delegates of the American Medical Association has voted unanimously its approval of the adoption of such a plan. Forty million of our people live in communities or in areas in which there is no access to the full time services of a professionally trained medical officer of health. In the state of Virginia there are 52 counties without a well trained health service. Many of these counties are either too thinly populated or too much handicapped financially to support this enterprise. This is a problem which must be solved to the satisfaction of the citizens of Virginia if we are to meet our responsibilities in matters of health in the state at large. Multiple county Health Departments sponsored by state funds may be the answer.

Nutrition will play a larger part in Public Health activities. Due to food shortage in the present emergency the civilian population will become more conscious of food values and food substitutes and will rely on the leadership of Public Health Officials for guidance.

The Post War problem of nutritional disease must be considered from two points of view, the general nature and extent of the problem and its scientific and technical aspects. According to Youmans the magnitude of the problem will be determined by four factors; first, obviously, the degree and duration of food shortages; second, the number of persons affected; third, the level of nutrition which at this time is considered to represent disease and, fourth, the extent to which responsibility for the nutrition of populations is accepted by responsible agencies. Although a low level of nutrition

will be manifest in some countries Youmans further states "it appears unlikely that any significant amount of serious nutritional disease will be found in this country as a result of the war. Rather it is probable that increased public interest, a better distribution of essential food among the various classes of population through governmental control, rationing and increased purchasing power, and the adoption of certain public policies in relation to food supplies and production will result in an even better state of nutrition in general than existed before the war. Such certainly seems to be the situation in England where definite gains in nutrition of the general population seem to have been secured because of the war and in spite of the difficulties caused by the war. The problem will be to secure the potentially tremendous improvement over present day levels of national nutrition. Medically it would mean the end of nutritional disease except for sporadic instances of conditional deficiency. The gains in public health, vigor and accomplishment are difficult to estimate".

Already a noteworthy national conference has been held on planning for War and Post War Medical Services. The program focused the attention of the medical profession and the interested public on the nature of the problems peculiarly medical which will confront the world.

Insurance Coverage for hospitalization has proven a sound undertaking and will doubtless continue to operate to the advantage of the patient as well as the institutions. No other health measure has surpassed this service to the general public in economy and in more efficient treatment. A similar setup for covering medical and surgical expenses is now in the experimental stage and under judicious restrictions it is destined to play an important role in the Post War era. It is recognized that this problem has many angles and is infinitely more complicated than hospitalization. However, the obstacles are not too great to be surmounted and a workable plan does seem possible without infringing on the rights of the patient or restricting the liberties of the physician. This is distinctly a medical problem and should be solved by them before it is promulgated by a bureaucracy.

Post War Medicine has a brilliant future unless it is inhibited by Federal regimentation or the creation of socialized medicine. Nothing is more deadly to scientific advancement than laws regulating the institutions where such endeavors are in progress. Just how far socialized medicine will become a reality is impossible to predict at this time. An ominous forecast in this direction is the recent ruling of the Supreme Court by which medical service may be legally sold through group insurance to individuals. Obviously the free choice of a physician is removed and the incentive for a higher standard of medical practice is eliminated. Wherever this deviation from medical ideals has been tried the progress of medicine has suffered and the individual has paid the price. Post War Medicine will rise or fall on this issue. Barring this eventuality medical progress will be reflected in a greatly lengthened life expectancy and a reduction in days lost by sickness.

Planning for Post War Medical Service is now one of the most urgent problems confronting the medical profession and is a subject sufficiently large to demand the best thought that our nation can afford. Last February the report of the National Resources Planning Board was sent to Congress by the President for consideration. This report did not deal with details; it consisted largely of generalizations which inclined toward the general point of view that action toward advancement of the health of the nation proceed along the lines of—

*(1) Federal appropriations to aid states and localities in developing a system or regional and local hospitals and health centers covering all parts of the country.

*Editorial, *J.A.M.A.*, 122:1, 38-39, May 1, 1943.

(2) Assurance of an adequate and well distributed supply of physicians, dentists, nurses and other medical personnel.

(3) Expansion and improvement of public medical care for needy persons through larger appropriations and through increased coopertaion by and with the medical and dental professions.

(4) Immediate action by government in cooperation with the medical profession to formulate plans which enable the patient to budget expenses over a reasonable period and to contribute towards the costs of care according to his ability and which at the same time assure to medical personnel a decent livelihood commensurate with the high costs of their professional training.

On the medical profession primarily rests the obligation for much of the active work of reconstruction and rehabilitation of the Post War world. We have been accused in the past with some justification that the mechanics of medicine have not been kept sufficiently flexible to meet the new issues as they arise. Be that as it may the changing world is at our door. Evidence is accumulating that the cost of adequate medical care is not within the reach of many civilians and some plan for meeting this issue must be formulated. The returning soldier will have become accustomed to complete medical service and will not willingly return to his former status. In order to protect the ideals of medicine and to prevent a lowered standard of practice, a comprehensive plan of coverage is imperative. Do we assume the leadership or do we await the verdict of a bureaucracy?

WILLIAM H. HIGGINS, M.D.

Floral Emponym (4)

IN 1760 John Clayton wrote from his home in Gloucester to John Bartram as follows:

"DEAR FRIEND:—

"I have sent you, inclosed, some seed of a new plant which I presume is a stranger in your northern part of the world. Indeed, it grows here only in the southern parts of this colony. I have it in my garden, but have quite forgot whether I showed it to you, when I had the great favour of your company. If I did, I believe I told you that it was to be called Amsonia, after a doctor, here; but I think the name inscribed upon the inclosed more proper, as it answers to the particular form of its seed. . . ."

Among writers upon Botany there is a great confusion as to the identity of Amson. Norman Taylor's Garden Dictionary states that Amsonia was "named for Dr. Amson, an 18th century Virginian physician". Bailey says it was named for Charles Amson, a colonial physician in the eighteenth century, a statement that occurs also in Webster's New International Dictionary. Peter Henderson says it was named in memory of Charles Amson, a celebrated traveler, whereas Britton and Brown make the statement that Amsonia is named for Charles Amson of South Carolina. Asa Gray is more noncommittal with the statement that the plant is said to be named for Mr. Charles Amson. However, in Gray's New Manual of Botany, 7th ed. 1908, there is the statement that it was named for Dr. Amson, physician of Gloucester, Virginia, in 1760, and friend of John Clayton.

Medical literature is entirely silent on Charles Amson. Dr. John Amson, the only Amson listed in Swem's *Index*, was apparently in the vicinity of Williamsburg as early as 1738. The York County records show that Dr. Amson acquired six lots in Williamsburg in 1746. These lots on Scotland Street were later bought by Dr. William Carter. On March 24, 1751, the Reverend John Blair wrote in his diary that he "saw Amson's Gardens, etc." The York County records indicate that Dr. Amson died sometime prior to July 29, 1765. Hunter D. Farish, Director of the Department of Research and Record, Colonial Williamsburg, to whom I am indebted for much of the above information, suggests that the name "Charles was mistakenly used for 'John'."

THE NAVY DOCTOR IN WAR*

REAR ADMIRAL LUTHER SHELDON, JR.,
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Assistant Chief of Bureau of Medicine and Surgery,
Washington, D. C.

It is not my intention to discuss with you tonight any one problem of Medicine and try to tell you just how it affects the Navy. Rather, I want to tell you something about the Navy Medical Corps, its history, its functions, its problems, and some of the things it has learned from this war. Necessarily, because I shall have to cover so much ground, my remarks will be sketchy and incomplete, but I hope they will be full enough to give you something of a picture of our work, the details of which you can fill in in your leisure moments and as you hear more and more of the activities of the Medical Department of the Navy as this war goes on.

History tells us that the Greeks and Phoenicians carried physicians with them on their sea voyages and that these men served usefully in battle, and from the writings of Homer we gather that some of the virtues of sulphur were known in the long distant days of which he wrote. Roddis,[1] in his valuable book, "A Short History of Nautical Medicine", shows that the Romans carried medical officers on their larger ships of war, and, strange as it may seem, the proportion of medical officers to crew was about the same as ours is today, 6½ medical officers to 1,000 men. Also, from this book, we learn that surgeons were classed as non-combatants and enjoyed the same immunities that we now enjoy under the Geneva Convention. What good these do to a medical officer of a cruiser or carrier when it is sunk, I am unable to say. In modern warfare, the term "non-combatant" is a misnomer.

Roddis also tells us that in the 14th and 15th Centuries the practice of quarantine came into being. It was demanded by ships' surgeons, some naval and some on merchant ships, because of the known introduction of plague by ships coming from ports where it was prevalent.

About this time there also came the change from oars to sails as means of propulsion. This meant longer voyages, larger ships, and many closed decks which led to problems of ventilation and proper feeding, for we must remember that in those days none of our modern methods of refrigeration and adequate storage of foods were known. As a result, scurvy became the great scourge among sailors. It was not until 1753 when James Lind published his "Treatise of the Scurvy" in which he showed that lemon and orange juice would prevent the disease, that real progress was made. It is hardly too much to say that this discovery, plus the later introduction of vaccination against smallpox, were largely responsible for the magnificent successes of the British Fleet against its enemies. Now, of course, we know that the virtue of lemon juice lies in its large content of ascorbic acid, something not even dreamed of by Lind, nor by the Fleet Surgeon who later accepted his findings and applied them to the British Navy, Sir Gilbert Blane.

The birth of the American Navy occurred October 30, 1775, when the Continental Congress established a Naval Committee and a few days later appropriated $100,000 to build thirteen ships of war. To these ships were assigned Surgeons and Surgeons' Mates, and since that time Medical Officers have been a part of the complement of naval vessels of any considerable size. As so often happens after a war, our navy practically disappeared following the close of the Revolution, but it was not long before world events necessitated the building of more and larger naval vessels to protect our commerce which was becoming world wide. All of the ships authorized in 1794 became famous in our history, two of them, the Constitution and the Constellation, making names for themselves which will never die. All of these ships carried medical officers, many of whom performed noble work under trying conditions and with extremely limited facilities. It is a far cry from the ill-equipped sick bay of those days to the modern hospital we now find on all our larger ships, with its compact but fully-equipped operating room, laboratory, pharmacy, and wards in which all

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manner of illnesses may be handled with as much ease and success as is possible in our hospitals on shore. Nonetheless, the problems of the sea-going doctor in the early days were similar to those met with in these days, and naval surgeons then, just as we must today, realized that Naval Medicine is a distinct specialty which, like other medical specialties, requires hard work and much study for its mastery. Naval Surgeons, then as today, accompanied their shipmates on dangerous missions and covered themselves with honor and glory just as our medical officers are doing today in the South Pacific, North Africa, the North Atlantic and wherever the ships of our Navy may be in their search for and contact with the enemy.

In 1821 the first naval hospital was established in Washington. Since then, naval hospitals have been built at many ports along both coasts and at inland naval stations, until today we have about 40 naval hospitals within the continental limits of the United States, ranging in size from 300 to 4,000 beds, to say nothing of the large number of mobile and advance-base hospitals which are scattered over the face of the globe, wherever our Naval and Marine Corps forces are gathered in sufficient number to require them. These hospitals are making history and performing feats of medicine and surgery far beyond those believed possible in any previous war.

As has been already stated, we of the Navy consider Naval Medicine a specialty, a specialty in which we must become proficient if we are to render useful service. Any other specialty we adopt must be secondary to this one.

Specialization in the Navy is encouraged and in times of peace a large number of medical officers of the Regular Navy are constantly under instruction in our own hospitals and at recognized Graduate Schools perfecting themselves in the various branches of medicine and surgery, so that we may have qualified men of all specialties on the staffs of our hospitals and hospital ships. Obviously, in time of war, this program of training in the specialties must be curtailed, since the relatively small number of medical officers of the Regular Navy must be placed in positions which require men trained in the primary specialty of Naval Medicine. This is where our Reserves come to the rescue. They far outnumber us of the Regular Navy and form the bulk of the medical officers now on duty in our hospitals, at our training stations, air stations, and other activities. Many of them are serving at sea or with the Marines. Where it is possible they are given duty which allows them to practice the specialty which was theirs in civil life. This is not always possible, and I am glad to say that almost without exception these men have accepted any duty given them without murmur and have done a good job. All that most of them beg for is active duty; the nearer the fighting lines the better. We are proud of our Reserves and feel that they are a choice lot. Whether they are working in their specialty or in some other field, I am sure that those who return to civil life after the war will be better doctors because of the service they have performed in the Navy.

But time is passing and I do not wish to use all of that allotted to me in relating to you the history of the Navy and its Medical Department. Suffice it to say that since 1775 there have always been doctors in the Navy who have gone about their work efficiently and quietly. Some have made great names for themselves in War and in Peace. Most of them have played their parts and passed on without reaching any great heights in the halls of Fame, but it may be said of almost all of them that they have been faithful in the performance of their primary duty, "To Keep As Many Men At As Many Guns As Many Days As Possible." How this is being accomplished in the present war is already almost history, but at the risk of repetition, I shall try to present to you some of the highlights of what our medical officers, both Regulars and Reserves, are doing today to preserve life and limb and how they are doing it.

From the time that World War II started in Europe it was apparent to many in the United States that we must eventually join in. Unfortunately, there were some in high places who felt that we could sit on the side lines, lend our moral support and furnish supplies, but avoid the unpleasant consequences of actual entrance into the conflict. Even after our relations with Japan became so strained that it was apparent to many that they must break, some said it "could not happen here". As a result, preparedness for war was dangerously retarded. Fortunately, the Surgeon General of the Navy, Admiral McIntire, is a clear thinker and did not share in this false optimism. As a result,

when Japan struck its dastardly blow at Pearl Harbor, the Medical Department of the Navy was in a state of readiness and was able to meet the load thrown upon it in a highly satisfactory manner. Since then, of course, many lessons have been learned through bitter experience.

BURNS

One lesson learned at Pearl Harbor and since is that in this war burns are to be a major item among our casualties, and that many of them would be flash burns, while others would be caused by men having to go overboard in water covered with burning oil. It became evident at once that flash burns could be prevented by keeping the body surface covered, even by the flimsiest sort of clothing. Consequently, men in zones where combat is likely are required to wear over-all clothing. As a result, flash burns of the body and extremities are becoming less of a problem. Burns caused by contact with flaming oil are not so easily prevented and still form a large part of our casualties. However, we have learned something about the treatment of burns and any man who survives them to reach medical care now stands an excellent chance of recovery.

At the time of the attack on Pearl Harbor the treatment of burns had not been so well standardized as it now is, but in almost every case tannic acid in some form was used. The results were good, but we know how to make them better. After much study of reports, research work, and consultation with the National Research Council, we have adopted a plan of treatment of burns that we believe will stand the test of time and result in greater saving of life than any other form of treatment now available. This plan may be divided into two parts, (1) First Aid Treatment and (2) Definitive Treatment.

The objects of *First Aid Treatment,* and this means treatment at the first opportunity, whether on a field of battle or when a man is dragged out of a burning compartment of a ship, or out of the water covered with flaming oil, are: (1) To protect the burned area, which is an open wound, from further contamination. (2) To prevent and combat shock. (3) To relieve pain. (4) To minimize fluid loss. Naturally, the first object is achieved by care on the part of the attendant, but because the burned area may already be contaminated, we also give Sulfadiazine, 4 grams, by mouth at once in all cases. Next, we administer plasma intravenously if conditions will permit, and it is remarkable how adept our medical officers have become in giving plasma under conditions that would make it appear impossible to most of us. This, and the prompt administration of morphine for the relief of pain are the two great preventives of shock, the major cause of death in severe burns as well as other injuries.

The Navy has adopted the syrette containing ½ grain of Morphine Tartrate as its standard, because it is easily administered and requires no preparation. So far as we know, this dose is not too large for any man under battle conditions.

We have given up the use of tanning in any form for first aid treatment of burns, because we have learned that infection may occur under an eschar and that pain may be relieved as promptly by simple boric acid ointment or vaseline as by tannic acid, either in ointment form or used as a spray. Over the ointment, we apply the usual sterile dressings and a firm bandage. If an extremity is involved, we advise the use of a splint, if one be available and time permit. In all burns of second or third degree, 0.5 c.c. of tetanus toxoid is injected intramuscularly, provided the man has already received his initial immunization. In cases of burns of the eye, 2 per cent butyn opthalmic ointment is used.

Definitive Treatment is begun as soon as the casualty arrives at a place where it may be given. Under conditions which have prevailed in the Navy until now, thanks to rapid evacuation by air, this usually means his early arrival in a well-equipped hospital in a zone of comparative safety. Definitive treatment is little more than a continuation of first-aid treatment under better conditions and has the same objectives: to combat shock, relieve pain, prevent loss of fluid and replace that already lost, and avoid contamination. In the hospital, controlled use of sulfonamides is continued, care being taken to guard against kidney damage; morphine is given as indicated for the relief of pain; and intravenous injections of plasma are given as frequently as is necessary to combat shock. In addition, glucose solutions are given to compensate for fluid loss, and saline solution when indicated in cases of persistent vomiting to overcome the loss of minerals.

All of these measures are life saving, and nothing more should be done until the danger of shock has passed. Then, active surgical interference may

be necessary. This will consist, in most cases, of debridement and the treatment of the resulting wound, followed in many cases by skin grafting.

We advocate the tanning or eschar treatment only in extensive flash or second-degree burns of the trunk which are seen within twelve hours after the burn occurs and in which strict asepsis is possible. Then, rapid tanning by tannic acid spray and silver nitrate is sometimes advisable. Slower methods of tanning are known to produce liver damage in many cases and should not be used.

Baths or packs of physiological saline solution have been found useful in the treatment of burns of the face, feet, hands, fingers, and the genitalia, and are frequently used.

Blood plasma has been our sheet anchor in the prevention of shock and has been worth more than its weight in gold. However, storage space is precious on board ship, so we are going over more and more to the use of human serum albumin as this becomes available. It can never take the place of plasma entirely, but it does seem to be equally effective in combating shock.

Immersion Blast Injury

That death may occur from the effects of blasts of high explosives without any external evidence of injury has been known for a long time, and much thought has been devoted to determining why this should be. However, it was not until this war that injury to men in the water caused by the explosion of depth charges and other underwater explosions became a matter of serious import. Even at Pearl Harbor it was noted that many men swimming to safety suddenly became still following an underwater explosion somewhere in their vicinity and were dead when picked up, although no signs of injury could be found upon their bodies. This led to an investigation of the cause of death and how to prevent it. At the U. S. Naval Hospital, Pearl Harbor, under the direction of Captain McMullin, Commanding Officer, studies were carried on to determine the mechanics of immersion blast injuries and the pathological effects. Captain McMullin[2] says that "The mechanism and biophysics of immersion blast injuries, whatever the details may be, result principally in damage to the lungs and to the walls of certain loops of intestine." Analysis of the history and physical findings in cases of immersion blast injury who survived to reach a hospital soon revealed facts that should be almost self-evident, namely, that the distance from the blast is a major factor in determining the degree of injury; that the position of the man in the water is of importance; and that the wearing of a life jacket affords some protection against injury.

Thirty-five (35) cases of immersion blast injury were admitted to the U. S. Naval Hospital, Pearl Harbor, five (5) days after they received their injuries. Of these, fourteen (14) showed symptoms of severe abdominal injury. Of these, four (4) died. Of the remaining ten (10), only two (2) were operated upon, the others recovering without surgical intervention. Conservatism was practiced with good results.

Of the thirty-five (35) cases admitted, thirty (30) showed abnormal densities in one or both lungs upon x-ray examination. All showed some degree of gaseous distention of the small intestine. Four showed evidence of perforation.

Of the four (4) cases that came to autopsy, three (3) showed multiple perforations in various parts of the intestine with diffuse peritonitis, while one showed no perforation, but massive hemorrhage from multiple torn vessels. In this case, there had also been massive hemorrhage into both pleural cavities.

It was apparent from all cases seen that the region of the cecum sustained the greatest injury.

How severe neurological damage is likely to be in immersion blast injuries is still open to question, but Lieutenant Hamlin,[3] who studied the Pearl Harbor cases, concludes that, "——— the nervous system, although less vulnerable than the abdomen or chest to underwater explosion, is liable to a relative degree of injury which should always be looked for by clinical examination and lumbar puncture."

The treatment of these cases, as of most cases of severe injury, consists chiefly of conservatism. Counteract shock by plasma and intravenous fluids; give nothing by mouth; use Wangensteen suction; supply oxygen; give whole blood transfusions if indicated; administer sulfa drugs intravenously; and keep up the vitamin supply.

Stimulated by the reports of underwater blast injuries received at Dunkirk and reported by Hooker in 1940, and the cases I have just mentioned reported from Pearl Harbor, Greaves[4] and others at the National Naval Medical Center undertook animal experiments to determine the exact physics and

pathology of these injuries. From their studies they conclude that:

"1. The presence of gas or air in the tissues is the determining factor in the production of underwater blast injuries.

"2. The lungs are particularly susceptible to injury. The gastro-intestinal tract is also susceptible but to a less degree.

"3. Injuries occur in the skull and upper respiratory passages when the head is submerged at the time of explosion.

"4. Pathological changes were not observed in solid organs and in tissues that do not contain air or gas.

"5. The underwater concussion wave produces tissue injury by shredding the tissues as it passes into a gaseous medium within the body.

"6. Kapok and foam rubber prevent or minimize the injurious effects of the compression wave."

Based upon these findings, instructions have been issued to all men of the Navy which, if carried out, should result in a lowered incidence of serious immersion blast injuries.

WOUNDS

So much has been published on the treatment of wounds in this war that it seems almost unnecessary for me even to mention the subject. However, wounds still form a large proportion of the casualties of war, and are still the thing in which surgeons are most interested. This war, so far, and so far as the Navy is concerned, differs from former wars in one important respect. The proportion of fatalities to non-fatal casualties is much greater than it has been in any previous war. This is to be expected, because of the nature of the warfare. Naval vessels and merchant ships are being sunk by torpedoes and bombs from beneath the water and from the air. The death-dealing forces of these weapons of war are well known. They kill outright and those who escape destruction usually escape serious injury. However, a large number are seriously wounded and, since the Navy is also responsible for the medical care of the Marines, our officers have seen and treated more wounded men than has been their experience in all previous wars.

For first-aid treatment, the Navy has advocated and still uses the sulfonamides in some form. Our first-aid kits carry sulfanilamide for topical application to wounds, and sulfadiazine for internal use, and results have been remarkable. Whether or not the sulfonamides were responsible, we know that the death rate from wounds of those evacuated from the Solomon Islands, and this includes all types of injury, has been much less than one (1) per cent, a remarkably low rate when we consider the extent of injury many of these men suffered. Plasma, plus sulfonamides, seemed the answer. Now, we are not so certain, for doubt has been cast upon the value of the local use of sulfonamides. In fact, investigation tends to show that in contaminated wounds, the dusting in of sulfa drugs does more harm than good, although in clean wounds, sulfa compounds may inhibit infection. There can be no question, however, as to the efficacy of sulfa drugs administered internally. They do reduce the incidence of infection. If not effective locally, at least they exert a beneficial effect in the prevention of general sepsis; and general sepsis, not local infection, is what kills. In wounds of the skull, chest, and abdomen the local use of sulfonamides is advocated even by those who doubt their local efficacy. Their value in these cases may well be due to the recognized absorptive capacities of these cavities.

Severe non-fatal wounds usually mean severely damaged tissues. Research apparently shows that severely damaged tissue develops inhibitors to the beneficial action of sulfa drugs. The search is now on for anti-inhibitors. Hope is held that these may be found.

The treatment of wounds is far from being a closed subject and the Navy is ready to adopt any method that may be shown to be effective. What we want is good results, whether they be obtained by the use of chlorine compounds, as recommended by many; or penicillin, which is just coming into quantity production; or by the use of sulfa drugs, combined with judicious debridement, which is now our method of choice. We shall not discard that which has been proved to be effective until something else has been proved better.

MALARIA

Earlier, I told you that the primary specialty of a doctor in the Navy is Naval Medicine. However, there is another specialty in which every medical officer who makes the Navy his life's work must be proficient. This is, Tropical Medicine. Even in

times of peace, the duties of a naval medical officer carry him into distant parts of the world where the diseases with which we are not so familiar in the United States are prevalent. He must be able to recognize them, know how to treat them, and, above all, prevent them from becoming a serious menace to the men for whose physical well being he is responsible.

Among the tropical diseases which it is the Naval Medical Officer's duty to prevent, and cure if prevention fails, are: Malaria, dengue, the dysenteries, typhus, cholera, yellow fever, plague, diseases due to intestinal parasites, filariasis, and many others. All of these, with the exception of malaria, may seem of only academic interest to most of you, but it is not beyond the realm of possibility that any or all of them may become problems with which you will have to deal before this war is over, or when our soldiers, sailors, and marines return after victory is won.

Of all of these diseases, the one of greatest importance, and the one that has been and will be a real factor in the successful outcome of the war is malaria.

In spite of the fact that the presence of malaria was known in many of the islands of the South Pacific where our men have been fighting, and steps were taken to protect our forces against it, this disease has hit us, and hit us hard. Thanks to the foresight of our Army and Navy, all men going into these highly infected areas have been required to take atabrine as a prophylaxis against the disease and every effort has been made to guard against their inoculation by infected mosquitoes. Owing to the type of warfare, complete protection has not been possible, so that a large number of our men after removal from these islands and the cessation of the use of atabrine have developed the disease. Fortunately, most of them, with proper treatment, will recover with little or no serious after effect.

It must be remembered that there is no "prophylaxis" against malaria. Even quinine and atabrine only suppress it and when their administration is stopped the disease is likely to develop. Without these "suppressive" measures, however, a military operation in a heavily infected area, such as the Solomon Islands, would probably be a failure. No man can fight at his best when he is shaking with a malarial chill. Quinine and atabrine, properly administered, in such areas are certainly as important as an adequate supply of guns and ammunition. Planes without pilots are useless and pilots with malaria can not fly.

At the moment malaria does not concern us at home greatly, but we must bear in mind that anopheles mosquitoes are found in most parts of the United States and that wherever anophelines are present, malaria is a potential menace. All that is required is a female anopheles and a carrier; and there will be many carriers among our returning forces. It will be well, therefore, for most of us to brush up a little on our knowledge of malaria and be on the lookout for its appearance in our communities.

Other tropical diseases may also prove to be problems for all of us—Filariasis, for example. This is a disease which has given most of us no concern. Yet, our marines are beginning to suffer from it, and are developing lymphangitis and elephantiasis, so it is something for which we must be on the lookout, no matter where we may be practicing.

I think we may safely trust to the Public Health Service and its Quarantine to protect us from most of the other tropical diseases I have mentioned. Should any of them break through the barriers, it does not seem likely that they could assume epidemic proportions. However, it is evident that we must be on our guard against them and that all of them are potential menaces to the health of our people. Therefore, I feel very strongly that Preventive Medicine should be given a much more prominent place in the curriculum of most of our medical schools than it occupies today.

I could go on for a long time and tell you more about what the Medical Department of the Navy stands for and what its members are trying to do, but feel that I have said enough to show you that we have real problems which we are trying to meet, and that our success or failure to meet them will play a large part in winning or losing this war.

There are many problems of Naval Medicine which, because time limits me, I can only mention, but each one of which is worthy of serious consideration. Among them are: *Aviation Medicine,* with its problems of oxygen supply to aviators flying at high altitudes and the prevention of blackout under combat conditions; *Submarine Medicine,* with its pressure and escape problems; *Research,* attempting to

solve questions pertinent to winning the war and to make life more worthwhile after we win it; *Neuropsychiatry,* attempting to prevent entrance into the service of those who are unfit and to rid the service of them before they become liabilities to the Government; *Venereal Disease Control,* with all its difficult problems of cooperation with local law enforcement officers and, when cooperation fails, using force; *Procurement and Distribution of Medical Supplies,* a difficult and essential duty; *Instruction in First Aid,* and we must not think that because we are doctors we know all about this; training so that our action will be automatic under any condition of stress is necessary; and, finally, the problems of *Rehabilitation* of those who are injured in service, physically or mentally. All these are matters with which the Naval Medical Officer must concern himself.

The papers have been full of the virtues of plasma, the sulfa drugs, vitamins, and various other special methods of treatment which have been used during this war. All deserve great credit, but, to my mind, these drugs and methods deserve less credit than do the men who have applied them. Without good judgment and a knowledge of how to use them they might have been less than useless.

It is evident from what I have told you that doctors of the Navy have a serious duty to perform. Most of them do it gladly and efficiently, and without thought of any reward other than that which comes from a knowledge of duty well done. Doctors whose life work is not with the Navy, but whose patriotism has caused them to serve with us in time of war soon catch this feeling. We are very proud of our Reserves and realize that without them the responsibilities of the Medical Department of the Navy in time of war could not be met.

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MANAGEMENT OF PLEURAL EFFUSION ASSOCIATED WITH PNEUMOTHORAX

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The occurrence of pleural effusion at some time during the course of a patient with pneumothorax is accepted as almost conventional. Since most of these effusions are relatively innocuous it is quite easy to follow the path of least resistance, also known as "watchful waiting", with too frequent discomforting results. With such in mind we have gradually adopted a routine in dealing with chest fluids, quite flexible in itself, which has proven satisfactory. The immediate goal is the maintenance of an adequate collapse with the prevention of empyema. The method is repeated aspiration.

In our practice approximately 85 per cent of the fluids complicating pneumothorax have yielded acid-fast bacilli and we accept this as the cause of the preponderance of effusions. Anaerobic cultures have been of no assistance. The etiological factor of the remainder falls to conjecture and includes the trauma of pneumolysis and the puncturing needle, introduction of air as a foreign body, novocaine, and extravasted blood.

If the effusion is small the patient is frequently asymptomatic and the fluid is detected during fluoroscopy. This is another reason why we believe it imperative that each patient be fluoroscoped prior to each refill. On the other hand, a small amount of fluid may cause considerable discomfort or alarm the patient by the noise or sensation imparted during a change of position. The usual complaints at the onset are of a "new chest cold", malaise, anorexia, and of chest pain of varying intensity. Massive, rapidly forming effusions may cause considerable dyspnea due to pressure on the heart and contralateral lung.

Upon detection of fluid in the chest, with or without symptoms, the patient is notified, stating that, while in all probability it is of no prognostic significance, its greatest import is the necessity for closer observation. The patient is then requested to return at a shorter interval even though it be for visualization only. A patient who has a systemic reaction because of an effusion will generally prefer bed rest on his own volition. We utilize bed rest in the presence of fever or other symptoms, but only for the relief of these symptoms, and not with the belief that it has any direct influence on the appearance or the course of the effusion. During the past 14 years there has been no patient unable because of fluid to come to the office for treatment.

A small amount of fluid raises the question of whether or not to be aspirated. We answer this by making an attempt, when it is at all feasible, for these reasons:

a. Many empyemas appear suddenly and are small in amount, often producing no early symptoms.
b. The difficulty of accurately estimating the amount of the effusion.
c. The simplicity of the procedure.

Fuid so small in amount that it is barely perceptible in the costophrenic angle, and whose level shows no change when the patient is tilted, is generally insufficient to be encountered by the needle and for the time being is observed only.

Routine cultures are made from the fluid removed at the initial aspiration of each patient. Cultures are repeated whenever there is a change in the quality or quantity of fluid or a change in the clinical status of the patient. A clear fluid, small in amount and transient, requires no further consideration. Should the fluid persist, even though small in amount, it should be removed sufficiently often to maintain a relatively dry pleura, since even persisting small effusions may produce adhesions or other undesirable sequelae. Large effusions should always be completely aspirated and it may be desirable or necessary to aspirate more frequently than the accustomed pneumothorax refill interval.

If this program is followed, the development of massive effusions can usually be avoided. Some observers feel that fluid is beneficial and should be removed only for symptomatic relief of dyspnea. Others believe that fluid may be beneficial in cavity closure and because of its weight especially beneficial in improving an inadequate collapse. In our opinion the disadvantage of fluid such as mediastinal pressure, the development of adhesions, and often an obliterative pleuritis outweigh any possible good effect to be obtained from the presence of fluid.

We have found that adequate aspiration is proportional to the care exercised in determining the correct site by fluoroscopy. If the procedure is to be carried out with the patient in the sitting position, as the majority of them are, he is upright while under visualization and the arms held in the same position that he is to assume. He is turned to determine if the fluid is in the anterior or posterior aspect of the chest. A pencil line is made at the fluid level. He is then tilted in the direction of the contralateral lung and a point marked for the insertion of the needle below the line, toward the bottom of the fluid, opposite the space now empty because of the new fluid level.

A ¾ inch 26 gauge needle is used to make the novocaine skin wheal and a good wheal is important toward making the procedure painless. A 1½ inch 26 gauge needle may be used to infiltrate the deeper tissues if necessary but we have found that a 2 inch 18 to 20 gauge needle used for the aspiration, if slowly inserted and novocaine forced ahead of it, usually suffices. If a large amount of fluid is present it should be removed slowly and air introduced at intervals to prevent mediastinal shift by maintaining a stable pressure. A second needle inserted into the pneumothorax space and attached to a manometer may be the method of choice. We prefer to use a simple syringe for the aspiration, the method quite slow in itself, and to keep the patient comfortable by checking the pressure and replacing air through the same needle. The amount of air to be replaced and the final pressure must be individualized. While change in pressure either way may tend to prevent fluid formation it is mandatory to hold the collapse and keep the patient comfortable.

Fluid which develops in conjunction with a re-expanding lung is less prone to develop into an empyema. It is aspirated to facilitate observation of the lung, to better control its motion, and to allow for optimum functional return. Allowing a lung to re-expand is not a passive process, but requires continued observation, progressively smaller refills and control of fluid. Effusion associated with spontaneous pneumothorax requires more vigorous treatment, for it is in this type—with a break somewhere

in the continuity of the visceral pleura—that conditions are ideal for the development of empyema.

Tuberculous empyema may complicate pneumothorax at any stage of treatment. It may develop suddenly, with or without symptoms, or may slowly appear in a fluid which was previously clear. For purposes of this discussion we may consider as tuberculous empyema any cloudy fluid containing tubercle bacilli and complicating pneumothorax. In our practice approximately 5 per cent of patients receiving pneumothorax conform to this definition. Our treatment of this complication is that of clear effusions but is more active and more energetic. All turbid fluid is completely removed and the pleural space irrigated with azochloramid until this returns clear. This is repeated daily until the fluid clears or until it becomes sufficiently chronic that we feel safe in removing it at less frequent intervals. We feel that if tuberculous empyema is treated early, persistently, and adequately by aspiration and irrigation, there will be relatively few cases requiring surgical aid.

The role of surgery in the management of chest fluids is limited to empyema and in tuberculous empyema it is generally confined to the sequela. (1) Persistent tuberculous infection of the walls of an empyema may resist treatment and because of excessive scar tissue the fistulous tracts communicating with neighboring structures, such as infected bone or suppurating mediastinal lymph glands, would continue to feed the empyema unless and until the focus has been removed. These complications demand surgical intervention. (2) Empyema associated with a healed lung which fails to re-expand may need the volume of the thoracic cage decreased surgically to obliterate the space. (3) Empyemas with a mixed infection which do not respond to energetic treatment with aspiration and irrigation may necessitate either open or closed drainage. (4) Rarely a rapidly forming pure tuberculous empyema producing profound toxic symptoms may justify surgical drainage.

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TREATMENT OF LYMPHOPATHIA VENEREUM*

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Lymphopathia venereum is a venereal disease caused by a filtrable virus, and it is ordinarily transmitted by intercourse. As far as can be determined, the incubation period is between ten and thirty days. The first noticeable lesion is a small vesicle on the glans penis in the male, and on the labia or vaginal mucosa in the female. The pathological picture in the male and in the female differs widely, although in each case there are primary, secondary and tertiary lesions. In the male, as has been said, the primary lesions consist of a small vesicle on the glans penis, and these usually pass unnoticed by the patient. About fourteen days after the initial lesion puts in its appearance the inguinal glands become swollen and tender, and the patient complains of soreness, malaise, chilliness and may have a degree or two of fever. As time goes on the inguinal glands become more swollen and more tender and mat together, and the skin overlying these glands assumes a violaceous appearance. Soon there are multiple areas of softening with a breaking down of the skin and discharge of yellow pus which may continue to drain for several weeks. During the secondary stages of the disease the diagnosis may be confirmed by the Frei test, which consists of the intradermal injection of Frei antigen. The test is positive if at the end of forty-eight hours a large red wheal is present at the site of inoculation. If the patient remains in bed and simple treatment is carried out, the draining sinuses tend to clear up spontaneously in about eight weeks, and in the male there are usually no further developments, except that in a small percentage of cases three or four years later a stricture of the rectum may develop. In female patients the primary lesion may be seen on the labia or the vaginal mucosa. This is ordinarily overlooked by the patient, and is not usually seen unless a vaginal examination is done for some other reason. Occasionally there is a swelling of the inguinal lymph nodes in the female. Ordinarily the secondary phase of the disease causes a transitory illness for which no reason is apparent, and

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the illness usually remains undiagnosed. The female patient is most often seen three or four years after becoming infected, and at this time she has symptoms caused by a rectal stricture. These symptoms are those of a low partial intestinal obstruction, namely, abdominal distention, cramps, rectal discomfort and paradoxical diarrhea. The diarrhea is caused by the partial obstruction which pockets fecal material in the recto-sigmoid colon. This fecal material becomes hard and acts as an irritating substance, and hence causes diarrhea. At this time a rectal examination reveals an annular constriction with smooth walls and without ulceration. The constriction is usually from one to three inches within the anus. If the patient is not seen until later, she is usually grossly debilitated and has signs of total intestinal obstruction. The patient in this condition is usually quite sick and must be treated carefully or death will result.

The treatment of lymphopathia venereum is divided into the treatment of its early and late manifestations. During the primary and secondary stages early treatment is carried out. The first requisite is bed rest, the patient remaining in bed from four to six weeks. Warm moist compresses should be applied to the suppurating glands. The patient should be given sedatives as necessary, and the diet should be light with a large amount of fluid. Proper elimination should be maintained by the use of mild laxatives.

For several years good results have been obtained in the treatment of lymphopathia venereum, during the primary and secondary stages, by giving Frei antigen intravenously. One-tenth of 1 c.c. is given bi-weekly and sometimes the amount is increased. The Frei antigen may also be given intradermally, but it is not as efficacious as if given intravenously. Often the use of the Frei antigen causes a marked exacerbation of the patient's symptoms and if this occurs, the dose should be reduced. More recently the use of sulfanilamide in large doses has been of great benefit in the treatment of the early stages of lymphopathia venereum. Fifteen or twenty grains of sulfanilamide given every four hours for a period of two to three weeks apparently prevents secondary infection and shortens the illness. It is not yet known whether sulfanilamide will prevent rectal stricture nor what its effect is on the course of the disease. However, it is being used more and more and usually the results reported are excellent. Surgical removal of the infected inguinal glands has been used for some years. This procedure requires a general anesthesia and the glands may be removed entirely. There is a risk, however, that in the male the lymphatic drainage of the leg may be interfered with, causing elephantiasis, and in women the operation may cause obstruction of the lymphatic drainage of the labia, resulting in the condition known as esthiomene, or swelling of the labia.

The treatment of the third stage of the disease resolves itself into the treatment of the rectal stricture. About eight years ago, an opportunity presented itself to treat several patients with partial obstruction, due to rectal stricture, with the Elliott machine. The Elliott machine is ordinarily used to treat pelvic inflammatory disease, and it consists of an apparatus for heating water to a fairly high temperature and forcing it through an applicator which is applied within the vagina. In the treatment of rectal stricture a small rubber applicator, approximately the size of the little finger, is introduced into the rectum. The water is then heated to the temperature of 130 degrees Fahrenheit and is passed through the applicator, which is within the rectum, for a period of one hour. The application of heat in this manner apparently causes resolution of the fibrous tissue and the stricture tends to disappear. In addition there is relief of discomfort caused by secondary infection. Ordinary care in the application of heat through the Elliott machine must be used—that is to say, the skin of the buttocks must be protected from the applicator by gauze packs and the temperature must not go above 130 degrees Fahrenheit, and the water pressure in the applicator must not go above three pounds as shown by the indicator on the machine. While this type of therapy has not been used in a large number of cases, it has been possible to follow two cases over a period of four years and the strictures have remained the same size, and the patients have been quite comfortable. In the treatment of advanced cases of rectal stricture with general debilitation, the procedure of choice is colostomy under local or spinal anesthesia. A double barrel colostomy is performed and is, of course, a permanent colostomy. The operation is somewhat dangerous because the patients are in such poor condition at the time they are operated upon.

CONCLUSION

1. Lymphopathia venereum is a venereal disease caused by a filtrable virus.

2. Lymphopathia venereum may be divided into primary, secondary and tertiary stages.

3. In the primary and secondary stages, bed rest, sulfanilamide in large doses and Frei antigen are the best means of treatment.

4. The Elliott machine may be used to advantage in the early treatment of rectal stricture.

5. A permanent colostomy is the procedure of choice in the treatment of far advanced cases of rectal stricture.

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MULTIPLE SACCULAR ANEURYSMS OF THE AORTA WITH ROENTGEN AND NECROPSY FINDINGS*

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While it is generally known that small aneurysms of the cerebral arteries are commonly multiple, the fact that more than one aneurysm of the aorta occur is often overlooked in clinical and roentgen examitions. In 1935, we had the opportunity to thoroughly study a case of multiple saccular aneurysms roentgenologically and at necropsy. A recent review of the literature by Wilburne and Taylor[15] with report of three cases brought out certain features of interest but failed to stress the marked similarity to lymphoblastomata and other mediastinal tumors.

Lucke and Rea,[10, 11] in a study of 217 cases of aortic aneurysm, found 46 cases of multiple aneurysms. Boyd,[2] in 4,000 cases of aneurysms of the thoracic aorta, and Hare and Holder[5] in 953 cases of aortic aneurysm contribute no information on the subject of multiplicity in their analyzed cases. Colt[4] found 57 cases with multiple aneurysms in 707 cases studied. Kampmeier,[6, 7, 8] in three separate studies reported 9 cases in 270 cases of aneurysm of the thoracic aorta, 23 multiple lesions in 633 cases of aortic aneurysm, and 6 in 73 cases in the abdominal aorta. Stengel and Wolferth,[14] in studying mycotic aneurysms, found the aorta most frequently involved with 88 aneurysms in 66 cases. In 217 cases of mycotic aneurysms in all sites, there was more than one aneurysm in 49 and they add that multiplicity is one of the most common features of mycotic aneurysms.

Syphilis was attributed to be the specific etiologic factor in the majority of the cases by Cecil,[3] while trauma was well discussed by Karsner,[9] atheroma by Ruffin, Castleman and White,[13] bacteria by Stengel and Wolferth,[14] and the occurrence of multiple aortic aneurysms in children reported by Acuna, Winocur and Orosco,[1] and Pincherle and Dalla Volta.[12]

CASE REPORT

A single colored male, aged 26 years, a garageman by occupation, was admitted with chief com-

Fig. 1.—Postero-anterior film of chest showing lobulated mediastinal mass, hilar densities and lower left pleural fluid.

plaint of a bad cold with cough and pain in his left side over his lower chest. For four weeks he had been troubled with a severe, frequent, barking cough, and the expectoration of thick, clear, yellow, tenacious sputum. There had been slight eleva-

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tion of temperature, headache, malaise and progressive weakness, more marked in the last week, with respiratory distress. One week before admission he had severe epistaxis, followed by a coughing spell. He had become moderately hoarse and pain in the left chest was localized, severe, and did not radiate.

There was a history of typhoid in early childhood, pneumonia, rheumatism in adolescence, gonorrhea in 1922, and syphilis in 1935, with 14 intravenous injections at St. Louis General Hospital. The mother and father were dead of unknown causes and there were no other members of the family.

Fig. 2.—Postero-anterior film with barium in esophagus, which was displaced sharply to the right by largest of the three aneurysms.

Physical examination showed a well developed and nourished colored male propped up in bed with definite labored breathing, and frequent expectoration of mucopurulent matter.

The temperature varied from 98 to 101 degrees, respiration from 22 to 25, and pulse from 75 to 110 during his stay in the hospital.

The blood pressure was 110 systolic and 70 diastolic in the left arm, and 120 systolic and 80 diastolic in the right arm.

A thorough examination revealed the following positive findings: general periodontal disease, slight bilateral cervical and submaxillary lymphadenopathy with small, firm, freely movable nodes, more numerous on the left, exaggerated breath sounds over both lungs with labored breathing and expiratory grunt, bronchovesicular in type. There was bilateral dullness from 3rd to 8th dorsal vertebrae posteriorly, 8 cm. wide, with slight dullness at both bases posteriorly without rales, widening of aortic arch on percussion anteriorly with dulness 5 cm. to right and left of mediastinum over 2nd intercostal space, and clubbing of fingers.

The essentially negative findings were: scalp, eyes, ears, nose and throat, no abnormal rate, rhythm, pulsations or enlargements of heart; no tracheal tugs, no abnormal reflexes, and no adenopathies except in the cervical region.

Fig. 3.—Lateral film with barium in the esophagus, which is flattened and displaced to right. Multiple masses in region of aortic arch.

Two blood Wassermann tests were made and both were reported four plus. Three blood studies gave an average hemoglobin of 80 per cent, red blood cells 3,900,000, white blood cells 17,500, polymorphonuclear leucocytes 82 per cent, and lymphocytes 18 per cent. Urine examinations were negative. The sputum was negative. The blood sugar was 75 and non-protein nitrogen 26.

ROENTGEN FINDINGS

Postero-anterior and left lateral views of the chest showed a somewhat irregularly lobulated mass in the mediastinum extending to both sides about equally and pressing the trachea forward and to the right.

The heart was not enlarged and was somewhat ptotic in type. There was marked prominence of the lower hilum and trunk shadows.

There was a small amount of fluid in the left lower chest above the dome of the diaphragm and at the left costo-phrenic angle. The left dome of the diaphragm was a little higher than the right and there was gas in the stomach and colon underneath it.

Fluoroscopy showed a lobulated mass in the mediastinum with a slight transmitted pulsation and fluid at the left base. The trachea deviated to the right.

All the findings suggested a lymphoblastoma with small left pleural effusion.

Roentgen therapy was administered to the mediastinum as a diagnostic test. In five days, 1,000 r was given in divided dosage.

Teleroentgenograms, fluoroscopy and esophagograms 3, 10 and 17 days after roentgen therapy showed no appreciable change in the size or appearance of the mediastinum. There were curved convex densities extending to the right and left, forming an enlarged mediastinal shadow. The esophagus curved sharply to the right and was flattened by pressure. The trachea was displaced forward. A mass which measured 11 cm. in width and 8.5 cm. in depth, anterior to the vertebral bodies, and 2.5 cm. posterior to the sternum, lying between the third and sixth ribs posteriorly, was seen. No expansile pulsation was noted to suggest any typical finding of aneurysm on repeated fluoroscopy, and we added, "but of course an aneurysm would still have to be considered".

Actually the presence of a lobulated mediastinal mass with pleural effusion in a young man without demonstrable expansile pulsation forced us to favor a malignant lymphoma even in the presence of a positive blood Wassermann and lack of response to roentgen therapeutic test. Death was attributed to mucopurulent material obstructing the air passages.

NECROPSY FINDINGS

The right pleural cavity contained a half liter of clear, straw colored, slightly sanguinolent fluid. The pericardial sac was intact and contained a normal amount of straw colored clear fluid. The left pleural cavity contained very little somewhat turbid, yellowish fluid which contained some threads of fibrin.

In the heart, the epicardium, endocardium and valvular apparatus were grossly unremarkable. The myocardium was slightly flabby; it was dark red in color on cut surface and the left ventricle was slightly dilated with apex rounded and the papillary muscles were not flattened. The size and shape of other ventricles and auricles was normal. The aortic cusps were intact. The coronary arteries were patent throughout and showed very slight atheromatous changes.

The first part of the aorta, up to about 7 cm. from the aortic orifice, was perfectly elastic and did not show any wrinkling, but revealed only a few small plaques of lipoid deposit in the intima. Close examination showed that the distended aorta was composed of three different saccular aneurysms in the arch 1, 3.5 and 10 cm. in diameter. The smaller, the size of a cherry, bulged out anteriorly to the left. The second, somewhat horn-shaped, bulged to the right and posteriorly; it had an orifice one cm. in diameter and was 3.5 cm. long. Close to this the third round aneurysm 10 cm. in diameter extended towards the right, pushing the trachea and esophagus to the right and extending with a recessed protrusion between the trachea and esophagus. When dissecting the esophagus from the tip of the aneurysm, it was found that practically no wall was left and that, at this point, the aneurysm was covered by a soft adventitial tissue of the esophagus. All three aneurysms contained only very little blood clot. The inside of the two small aneurysms, as well as a small area of the descending part of the arch of the aorta showed a wrinkled appearance. Numerous scars were present in all directions in a whitish gray colored intima. The inside of the large aneurysm, however, showed a rough surface, covered with a thin layer of reddish yellow colored friable thrombotic masses. The furrowed appearance of the inside of the aorta was sharply demarcated, a few centimeters beyond the area of aneurysms, against the descending part of the aorta, which itself was smooth and showed only a few arteriosclerotic plaques. The wall of the descending part of the aorta was elastic. No changes were noted in the large branches of the

aorta. The microscopic diagnosis was syphilitic aortitis.

The left lower lobe and lower part of the left upper lobe showed confluent bronchopneumonia, with suppuration abscess formation and small areas of bronchiectasis. The right middle lobe showed old tuberculosis with atelectasis of the right lung and bilateral pleura effusion. Microscopically, there was old and active tuberculosis and suppurative bronchopneumonia.

There were enlarged hilar lymph nodes which under the microscope showed tuberculosis and anthracosis. Autopsy by Dr. Lechausse.

DISCUSSION

A brief survey of the literature reveals a relative infrequency of multiple aneurysms of the aorta with only isolated case reports and no comprehensive reviews or studies of cases until the paper by Wilburne and Taylor[15] who have added three cases of their own, two with necropsy studies, and all with roentgen findings.

The young age of the patient in our own case was counted as a point against aneurysm, but we note that multiple aneurysms of the aorta have been reported in a six year old girl,[1] and a seven year old boy,[12] both cases attributed to syphilis.

The presence of tuberculous and anthracotic hilar lymph nodes merged with aneurysmal masses of varying sizes further complicated our case.

Suppurative bronchopneumonia, atelectasis and bilateral pleural effusion added densities frequently seen in the lymphoblastomas, especially in young adults.

The fluoroscopic differentiation of expansile from transmitted pulsation is often impossible, especially when clots are present within and inflammatory processes are present outside and about the vessel under study.

Roentgen therapy applied to mediastinal masses can serve as a valuable diagnostic test as the majority of mediastinal tumors are radiosensitive. However, it is of greater value when there is a positive response than when negative as in this case.

SUMMARY

A case of multiple saccular aneurysms, occurring in a young negro man with a positive blood Wassermann, is reported with clinical, roentgen and necropsy findings. The literature on multiple saccular aneurysms has been briefly reviewed. Sir William Osler's dictum that there is no disease more conducive to clinical humility than aneurysm of the aorta, appears to be confirmed. We might substitute "roentgen humility" for "clinical humility" and place the word "multiple" in front of aneurysm.

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TREATMENT AND ANALYSIS OF 350 CONSECUTIVE CASES OF ACUTE APPENDICITIS

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The purpose of this presentation is threefold. First, to present 350 consecutive carefully analyzed cases covering a five and one-half year period from July, 1937, to January, 1942, treated at this hospital.

Second, to compare our cases and treatment with that of other hospitals in order to arrive at a conclusion in regard to our methods and results of treatment in view of the apparent trends (according to statistics) toward an increase in the mortality of appendicitis. Jackson and Perkins,[1] Morse and Rader,[2] and others have shown that the mortality rate in appendicitis seems to be increasing rather than decreasing, this being particularly true in the perforated cases in which the highest mortality occurs. The mortality rates in cases of perforated appendicitis vary from 10 per cent[3] to 31 per cent[4] or more, while the non-ruptured cases vary from zero per cent[3] to 5 and three-tenths per cent[5] or more in the literature.

Finally, the analyses were made as a matter of personal interest and are a contribution of a number of well considered cases toward the common problem involved.

In selecting our cases, an attempt was made to rule out all except acute cases. For this purpose, careful records of the operative findings, particularly in regard to the presence of fecaliths, and careful pathological examinations were made in every case. Most of our cases showed definite pathological changes. A few cases showing little or no pathological change, but in which multiple fecaliths or constrictions were present, were included on the basis of the work of Wangensteen,[6] Dennis and Buirge,[7] and were placed under the head of mechanical appendicitis.

TABLE I

ETIOLOGY—350 CASES

	NUMBER	PERCENTAGE
Inflammatory	252	73.9
Gangrenous	69	19.7
Mechanical	26	7.4
Ruptured	31	8.8
Non-ruptured	302	86.4
Abscess	17	4.8

The scope of this paper does not attempt to include detailed symptomatology, blood counts, etc. However, on the basis of experience, it was felt that one symptom or physical finding should be emphasized—that of persistent, localized tenderness. For purposes of comparison, this finding was analyzed along with that of the often-quoted finding of rigidity.

TABLE II

TENDERNESS	NUMBER	PERCENTAGE	RIGIDITY	NUMBER	PERCENTAGE
None	4	1.1	None	116	33.1
Slight	79	22.5	Slight	171	48.9
Moderate	138	39.4	Marked	63	18.0
Marked	128	37.0			

In 139 cases with slight rigidity, there was moderate or marked tenderness. In the remaining 32 cases showing slight rigidity, there was slight tenderness. In every case with marked rigidity, marked tenderness was present.

The duration of the patient's symptoms before operation was determined on the basis of the patient's history and was in most cases quite clear cut. This time interval was determined separately and without relation to treatment, but, as will be shown, had a very interesting relationship to our form of treatment.

TABLE III

DURATION OF SYMPTOMS PRIOR TO OPERATION

Average	2.76 days
Non-ruptured (307)	2.66 days
Ruptured (31)	3.80 days

In our method of handling these cases, we have attempted to come to a compromise between the delayed treatment (so-called Ochsner method) and the method of immediate surgical removal[8] in all cases. It is true that in most of our cases immediate surgery with removal of the appendix was done (see Table IV), but we do attempt to judge a little more closely any case with acute symptoms of three days or over, and it was in this group in most instances that our delayed treatment was carried out. It is obvious to the experienced individual that perforation may occur prior to or after this arbitrary period,

but it is our feeling that by keeping this period in mind, these cases may be selected out of the group. This corresponds to the feeling of Haggard and Kirtley,[9] Barrow and Ochsner,[5] Gardner,[10] Jackson and Perkins,[1] and many others. This arbitrary three-day period closely correlates with the cases presented here in which the non-ruptured cases averaged 2.66 days and the ruptured cases, 3.80 days.

TABLE IV

TREATMENT

	No.	Percentage
Immediate surgery and removal of appendix	335	95.8
Delayed surgery and removal of appendix	11	3.1
Delayed surgery without removal of appendix	4	1.1

Cases seen at the three-day interval are carefully examined, making use of all laboratory and other aids available. If there is still some doubt in regard to the evidence of rupture, operation is performed, as it is shown so definitely that the removal of an appendix that has not yet ruptured is much less dangerous than the removal in the case of perforation or abscess formation (see Table VI). It is felt, however, that it is wrong to operate immediately on a patient showing definite evidence of acute rupture or acute abscess formation. The only exception to this might possibly be a case with a fulminating general peritonitis[11] without any evidence of localization after a period of watchful waiting. Such a situation is extremely serious with or without operation.

There were seventeen cases of appendiceal abscess in this series. These were treated conservatively with delayed operation. In six, or 35.3 per cent of the cases, removal of the appendix and drainage was instituted, and in eleven cases, drainage without removal was done at operation.

An analysis of the cases drained follows:

TABLE V

DRAINAGE

Type of Case	Number	Percentage of Drained Cases
Abscess	17	45.4
Ruptured with abscess	11	27.6
Non-ruptured	10	27.0
	—	

Total—38, or 10% of the series.

With the present use of the sulfonamide group of drugs,[12] a non-ruptured case is rarely drained, and in a few instances we have closed, without drainage, cases of perforation, so that the latter group in Table V is now practically non-existent.

TABLE VI

MORTALITY

Acute appendicitis without rupture	0%
Acute appendicitis with rupture:	
31 cases with 5 deaths	16.1%
Total mortality for series (350 cases)	1.4%

The fatalities in this series of cases are shown above and number five cases in all. One of these cases showed general peritonitis, pelvic and subphrenic abscess, and intestinal obstruction. This case had symptoms of three days' duration; there was a gangrenous, ruptured appendix without abscess formation which was removed by immediate surgery, drainage being instituted. The second case was of seven days' duration. There was a gangrenous ruptured appendix without abscess formation which was removed by immediate surgery with drainage. General peritonitis and pelvic abscess developed. The third case developed a sub-phrenic abscess following simple drainage of an abscess without removal of the appendix, in a case of nine days' duration. Of the two remaining cases, one was a gangrenous ruptured appendix without abscess formation which developed a fatal pneumonia; the other was an elderly man with a recurrent acute appendicitis with rupture and local abscess formation, who developed cardiac decompensation followed by wound disruption and local peritonitis.

In this series are included five cases of recurrent acute appendicitis[13] in which the primary treatment was simple drainage. In each instance the patient had waited too long before returning for appendectomy, and an acute flare-up had occurred. Our patients are advised to return for appendectomy between six and eight weeks following a simple drainage of an appendiceal abscess. The early removal of the appendix following drainage avoids acute flare-ups and is without reaction on the part of the patient, the peritoneum apparently having been vaccinated at the previous time of rupture.

SUMMARY

1. The pathological changes in acute appendicitis have been divided into inflammatory, gangrenous and mechanical phases for purposes of this paper.

2. Persistent, localized tenderness is emphasized as an important criterion in diagnosis.

3. Immediate *versus* delayed treatment has been considered, and a compromise on the basis of a three-day suggestive and purely arbitrative period is present.

4. Statistics in regard to etiology, symptomatology, treatment, drainage, and mortality are present.

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CLINICAL ASPECTS IN THE TREATMENT OF SYPHILIS*

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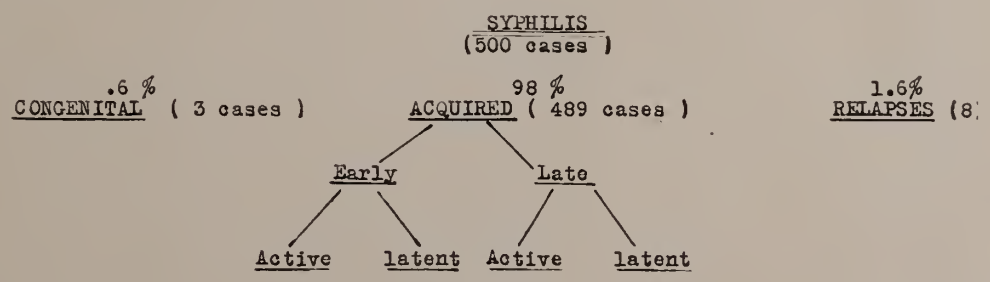
With the hope that we might get a better idea of how syphilis presents itself here in our own community and that some of the vitally important points in handling a luetic case under treatment might be re-emphasized, it is our desire to analyze a series of 500 cases now under treatment in the Medical College of Virginia syphilis clinic.



Here we have all our cases divided into three classes:

I. By the congenital class, we mean those cases which are born with the syphilitic infection. It may be active at the time or latent to become active later in life. As we can see, less than 1 per cent of our cases were in the congenital class. This is hardly a true picture, because we only treat adults (from 12 years and older) and these three happened to be cases that had either graduated from the child luetic clinic or their congenital manifestations did not develop until they passed into our adult age group.

Since this group appears relatively insignificant in this series, I would like to stress one point and pass on to the next group. It is often mistakenly

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understood that hereditary syphilis must manifest itself at birth. Recently, one of our patients who was reporting for syphilis treatment brought his eight year old boy along with him. His son had an eye in which the vision was getting dimmer and dimmer despite the limited procedures at his mother's disposal. On inspection it gave a characteristic ground glass picture of interstitial keratitis. After eye consultation and a positive Wassermann test, in the absence of any personal luetic infection of the boy, it had to be regarded as a late manifestation of congenital syphilis.

The point to be stressed, then, is this: All children of luetic parents (either one or both) should have serologic tests done early in life. It may be late in childhood or in early adulthood before the disease manifests itself. If the child is treated early for his positive serology, odds would be much against the disease ever manifesting itself clinically.

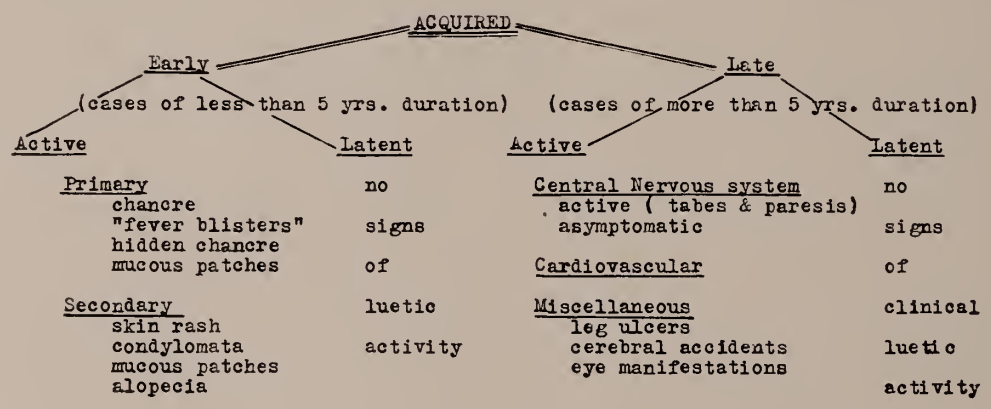
II. By a "relapsed" case, we mean one which has a recurrence of a primary or secondary lesion after these early lesions have once healed. This usually happens to a patient who has had the disease less than four years and who has never had a reversal of blood serology and who has taken very irregular or inadequate treatment. Of our eight cases which relapsed, five were recurrent skin rashes and three were recurrent chancres. Since this group occupied only 1.6 per cent we will not dwell on it at length—only long enough to emphasize that it is a very discouraging complication both to the doctor as well as the patient. It can practically always be avoided by adequate systematic treatment.

Since 98 per cent of our cases deal with the "acquired" variety, we will spend the rest of our time in this field. For purposes of treatment we divide all "acquired" cases into one or two groups, either early or late.

III. The early cases are generally referred to as cases of less than five years duration.

Our primary lesions were no respector of age or locality. The majority of these lesions were chancres and, in every case but one, were penile in the male and about the vulva and intravaginally in the female. One of our recent cases was a deaf and dumb 22 year old colored boy who had a chancre about a relaxed and ragged anus. Another one of this series reported at the youthful age of 12 with a typical penile chancre. We even have in this series a 65 year old colored man who recently began his luetic experience with a penile chancre.

Another primary lesion can be and has been at times overlooked—the so-called "hidden chancre". We had a very interesting case in this respect. A colored male was sent by a local doctor to the clinic because he had a stubborn case of gonorrhea that did not respond to the sulfonamides. He had been treated every four hours for six weeks with this medication and the discharge was as profuse as the first day of his disease. He was misguided to the syphilis clinic instead of the urological clinic. While he was in the D & S clinic someone examined him and found that beneath a tight phimosis there was a hard indurated, well circumscribed area on the glans penis. He had, in addition to this lesion of the penis, hard shotty painless lymphadenopathy in the right groin which must have been due to a "hidden chancre" on the penis. There was still a profuse urethral discharge from which smears were taken and diagnosed gonorrheal. A stat serological test was positive. He was immediately put on early active treatment for syphilis and continued his same



gonorrheal treatment under his family physician's care. Within five days the discharge had cleared up entirely. Two weeks later the "hidden chancre" could not be felt. We are not advocating the syphilis treatment for gonorrhea, but there did seem to be some synergistic action that facilitated a cure for his gonorrhea when he received his much needed syphilis treatment.

In the rare case there is the luetic "fever blister" with regional hard shotty lymph nodes in the submandibular regions. In the female, mucous patches are often found in the vagina and about the cervix. Since these lesions are always on moist mucous surfaces, it follows that we should see them frequently in the mouth and about the fauces and soft palate.

The secondary lesions in this series consisted of various skin eruptions, condylomata, mucous patches and, in one case, severe alopecia.

The early latent cases are those of less than five years duration with no clinical evidence of syphilis.

As for the treatment in these early stages, suffice it to say that it is as intense as we dare to give it. It is often said that in early syphilis it is the syphilis that we treat, while in the late cases we treat the patient. Early syphilis might be likened to a small fire starting in a furniture store. The firemen rush in, without much regard for damage to the store and its contents to control the fire almost at any cost. We are not that disregardful of the patient's welfare in early syphilis, but we do realize that now is our chance for cure and we should push our drugs to any limit that is compatible with the safety of the patient. For the first few weeks particularly do we "bear down" on the patient. After one or two strong arsenic treatments the organisms are believed to be killed, thus eliminating a public health hazard, as well as benefiting the patient.

Duration of the treatment: In the early primary or secondary lesions we have been treating on an average of twelve months. If the cases are not detected until they have gotten into the dormant or latent period of early syphilis, we are not satisfied with less than eighteen months of treatment.

LATE SYPHILIS

These are cases of more than five years duration. As in early syphilis, this group is divided into its active and dormant, or latent, divisions. Our cases of active syphilis in this late group fall mainly into three groups:

Central Nervous System Lues: Here the spirochete has invaded the vital nerve tree and manifests itself usually as tabes, paresis, tabo-paresis and meningo-vascular syphilis. There is also the asymptomatic group of c.n.s. lues, which is characterized by spinal fluid changes with no clinical symptoms of c.n.s. involvement.

Cardio-Vascular Lues: It is important to know if your patient has this in order that you don't kill him with arsenic. I have seen two cases in a general hospital where this was done. It can happen in your office just as easily. In both cases the patient had well described "to and fro" aortic murmurs written up on the chart and in both cases the tragedy followed the first heavy dose of neo-arsphenamine. Therefore, it is never advisable to give arsenic to cardio-vascular luetics unless it is given with the greatest of caution, and even then in selected cases with very small doses. Our policy is never to use it in elderly patients with luetic aortitis.

Another unusual complication, two of which we have in this series, is thrombosis of the posterior inferior cerebellar artery. Both occurred in rather young men—one 36, and the other 29. The symptoms and signs were of rather gradual onset, culminating over a period of 10-18 hours. Both of these cases involved the left side of the face and the entire right side of the body. There was an anesthesia of the skin and partial motor paralysis. There were definite signs of cerebellar incoordination and other localizing signs which made the diagnosis of thrombosis of the posterior inferior cerebellar artery as definite as it was interesting.

The Miscellaneous or Benign Group—Sometimes Called the Allergic Manifestations of Syphilis: Our leg ulcers and eye complications belong to this group. There are others, such as arthropathies, bone lesions, gummas of tendons, muscles and viscera which also fall into this category. One of the most interesting things about this group, as Moore points out, is that it enjoys an apparent immunity to c.n.s. involvement.

Acquired Late Latent Syphilis: This is the diagnosis in those cases of more than five years duration which have no signs of luetic activity. Before we place a case in this classification we must use every means at our disposal, including spinal puncture, to determine that the syphilis is quiescent. I am certain that we are treating cases in our syphilis clinic, as well as in our private practices, of central

nervous system syphilis as harmless late latent cases because a spinal puncture has not been done. I base this on the following statistics:

Statistics: In this particular series of 500 cases now under treatment, 45 spinal punctures have been done. Only four of these gave clinical suspicions of c.n.s. lues beforehand, yet the following results were obtained:

(1) Fifteen showed *positive* Wassermann—(a) Seven showed *positive* Wassermann only. (b) Eight showed signs of c.n.s. luetic activity (cells, protein, mastic, as well as Wassermann). Only half of these (4) demonstrated physical findings of c.n.s. lues.

The spinal puncture is a very important factor in determining the treatment of syphilis. There are many cases which are regarded as late latent cases, which, after spinal puncture, are definitely demonstrated to be active central nervous system syphilis. Our indications for spinal punctures are as follows:

Indicated:

(1) always before a case is discharged from treatment.

(2) in all late cases (more than 5 years duration) on admission.

(3) specific indications suggestive of c.n.s. disturbances.

SUMMARY

A series of 500 cases treated for syphilis at the Medical College of Virginia clinic is presented and the following points are emphasized:

(1) All children of luetic parents should have Wassermann tests early in life and be submitted to treatment before clinical signs develop.

(2) Vigorous and regular early treatment should be insisted upon in order to make more certain chances of cure and less certain the possibility of "relapse".

(3) In treatment of the "late" cases particularly, an evaluation should be made of the patient's cardiovascular status to be certain that he does not have luetic involvement, in which case all arsenicals should be contra-indicated or used with the greatest care.

(4) It was pointed out that no case should be discharged from treatment without spinal puncture. Indications for spinal puncture in this clinic are listed.

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RECENT TRENDS AND CURRENT ATTITUDES IN ORTHOPEDICS*

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Occasionally it is helpful to stop and analyze one's opinions on his subject—to crystallize the ideas he has collected in the back of his head, by putting them into words.

During the past three years I have had the opportunity to work and study in the limited field of orthopedics; this has made it possible for me to familiarize myself with the literature, recent trends of thought, investigation and technique in this field, and so tonight pass on to you my personal impression of the current attitudes prevalent among orthopedists. Perhaps some of them may prove of value or, at least, interest, to you.

I shall not attempt to discuss fractures, although there is still a definitely changing attitude toward many types of fractures, as exemplified by the general acceptance of Caldwell's hanging cast for most fractures of the humerus, and the trend toward open reductions for many ankle fractures and fractures of the calcaneous. In passing, I would like to recommend local anesthesia for broken ribs in elderly individuals.

The value of the sulfonamides, of internal fixations, and of plaster encasement for compound fractures will be determined after this war is over and the final analysis completed. Already, it is apparent that *nothing* takes the place of early, careful and thorough debridement of all compound fractures. Local applications of a sulfonamide cannot protect devitalized tissue—figures from England have already proved this.

Just as it must be a long time after this war before the final analysis can be made on compound fractures, so it has taken twenty years since World

*Presented at the January, 1943, meeting of the Northampton County Medical Society.

War I, to properly evaluate the results of amputations in that War. Last spring, Dr. Gallie, Canadian surgeon directing the care of disabled veterans, made several rather definite and important statements. He has concluded, after observing many types of amputations under varying conditions of use, that a properly performed Gritti-Stokes amputation (remember this is above the knee) provides a more satisfactory limb in the long run, than any other amputation of the leg with the possible exception of a well done Symés. This gives anyone who is planning or ever expects to do an amputation through the upper tibia, something to think about.

So much for amputations! What's new in arthritis? I wish I could pass on to you a startling advancement in the treatment of arthritis. I am sorry, but I know of none. It may be worthwhile to review this whole subject, though, for I know you all have the same problem to face again and again. What can I honestly offer the arthritic?

First of all, with what kind of arthritis are we dealing? Is it specific, atrophic, hypertrophic, or traumatic? And don't forget gout! From the Mayo Clinic comes more and more evidence that we may be missing a good many cases of border-line or atypical gout. The first step in diagnosis is to think of it. The true test is a response on the part of the patient to dietary adjustments and perhaps neocinchophen.

Of the specific arthritides, by far the most common is gonorrheal. The dramatic response of *gonorrheal urethritis* to the sulfonamides is all fine and good—but that isn't the end of the story. We are still seeing joint complications, though they do seem less frequent and less severe than before the advent of sulfanilamide. The most important principles in the treatment of these complications are as true as they ever were. Put the joint at rest, and prevent deformities.

Given a case of acute gonorrheal arthritis of the knee, the patient should certainly be kept in bed. Apply traction if necessary to overcome painful spasm. Aspirate as frequently as effusion recurs. Remember that the presence of polymorphonuclear cells in a joint spells permanent injury, for the proteolytic enzyme of the polys *dissolves* hyaline cartilage. If the cartilage is already destroyed, immobilize the joint in a functional position until ankylosis has occurred. A wrist stiff in flexion is useless —one in extension is surprisingly efficient. The acute joints subside rapidly when the blood stream is saturated with a sulfonamide. Chronic joints respond best to fever therapy.

Atrophic arthritis is a more discouraging subject. The two previously mentioned fundamentals apply just as definitely here—put the joint at rest and avoid deformities. But in all fairness, I'll add the condition "whenever this is possible".

During the past year there has been in a few isolated investigation centers a shift of attention in the field of arthritis. Previously workers have attempted to establish an infectious element in the etiology of arthritis, yet only three conclusions have been justified: (1) Foci of infection have an unfavorable effect on atrophic arthritis. (2) The streptococcus is probably associated either directly or indirectly with all forms of atrophic arthritis—be it Still's disease, Marie-Strumpell spondylitis or the more familiar arthritis deformans which so commonly cripples the extremities of a previously vigorous young adult. (3) The third point of agreement is that there is still an undetermined factor, probably systemic rather than local, which is common to all cases of the atrophic variety.

It is this undetermined factor which must hold the key to the mysteries of arthritis. I cannot resist the temptation to talk a little about this undetermined factor, even though such a discussion is surely premature.

Recently Miller and DeTakas published a report on their study of the role of the sympathetic nervous system in post-traumatic osteoporosis (often called Sudeck's atrophy). They pointed out the similarity between certain elements of atrophic arthritis and of Sudeck's atrophy, especially the chronic hyperemia and edema of the joint capsules, the loss of calcium from the bone, the severe pain and spasm, and certain changes in the skin texture common to both disorders. It has been proven clinically that a disturbance in the sympathetic nervous system is the cause of the circulatory disturbances (which, in turn, seem to be responsible for the pain) in the case of the post-traumatic disorders. Perhaps the same may be true in atrophic arthritis; even though the precipitating factors are admittedly different. This is a field which deserves further investigation.

But to come back to earth—what can we do for

the unhappy arthritic today? Systemic measures are of major importance—and among these I mean a healthy diet. It is granted too much protein and starch are undesirable, yet the patient must be well nourished. An adequate vitamin complement is most valuable (and apparently this means much larger dosages than those required by the normal individual).

X-ray therapy has by now unquestionably proved its value in the treatment of early cases of Marie-Strumpell spondylitis but even here it is not sure-fire. I am sorry to say that its results do not justify the application of x-ray to other forms of arthritis.

But let us not forget the basic pathology in the joints. As an orthopedist I should be limiting my discussion to this aspect of the disease, anyway, and leave the systemic treatment to the internist—for it most surely is a medical problem. Since the synovia are proliferating, forming villae and tabs which spread across the articular surface to erode the cartilage and leave narrowed joint spaces which usually ankylose, the treatment is self evident. Put the joint at rest. Prevent deformities.

The individual case must dictate the special measures required to accomplish this. A wide variety of splints are available, but for real immobilization to insure absolute rest and ankylosis in an optimum position, nothing can take the place of a plaster or celluloid cast.

Hypertrophic Arthritis. Again I have nothing dramatic, but will briefly review the pathology and a few principles of treatment, as I did for the atrophic variety. This disease, also called degenerative arthritis, occurs in elderly people and usually first affects those joints which have carried the heavier loads. Fibrillation of the cartilage, bone hypertrophy and spur formation occur, but the end result is an eburnation of the joint surfaces without ankylosis. So, with the outlook that all this implies, I try to impress these patients with the fact that their relief must come from a combination of things—not a magic cure.

It is obvious that the obese individuals complaining of hip, knee, or ankle should reduce the load by dietary measures. By the same token they must learn to plan their activity in terms of saving (or perhaps rationing is a better word today)—thus rationing the usefulness left in the joint. The housewife must avoid climbing up and down stairs, and the husband who has lived by the strength of his back must now get someone younger to chop wood and carry out ashes.

Foci of infection, good dietary habits, proper care of the bowels, and a happy environment must all be considered in treating the elderly arthritic, but as far as I know nothing can take the place of salicylates. There are many people who are able to go back to work today, when the younger men are needed for more vigorous duty, because they have made friends with aspirin. I see no more reason for an arthritic not taking aspirin regularly, than for a cardiac not taking his digitalis.

Mechanical measures which also help are heat and, as with the atrophic variety, immobilization. Heat seems to help a joint most when applied as a moist compress, though I realize this is the most inconvenient and troublesome method. Measures for immobilizing hypertrophic joints need not be as vigorous as for an atrophic one. Night splints often do wonders. On the other hand, there are a few hips which respond only if put at complete rest in a spica—and believe me this is sometimes justifiable.

Surgery may seem like radical treatment for hypertrophic arthritis, but there are just a certain number for whom this is worth while. Two procedures most often indicated are patellectomy for localized changes of the patella, and synovectomy of the knee when exploration reveals a marked synovial proliferation with relatively little break-down of the articular surfaces themselves. For years now, McMurray has championed a high osteotomy at the hip to re-align the thrust and weight-bearing in that joint. He claims to have added at least ten years of productive activity to many patients with disabling hypertrophic arthritis in the hip.

One more of the group of arthritides, and we'll talk about something else. *Traumatic arthritis* is closely related to the hypertrophic, degenerative, or so-called osteo-arthritis. It is more of a mechanical and less of a systemic disease, however. Usually traumatic arthritis occurs in a single joint which has been subjected to some particular insult—the strain of mal-alignment or the cumulative injury of some repeated trauma. The basic treatment is obvious—re-align the joint by balancing shoes, correcting posture, supporting the abdomen, back, etc. If possible eliminate the trauma. Additional treatment follows the same lines as mentioned for hypertrophic

arthritis—heat, rest, salicylates, support.

As far as I know, there has been no new contribution to the subject of *birth injuries*. The upper-arm or Erb-Duchenne type, that most frequently seen by us all, is still a disabling deformity if left untreated, but with proper care can be limited to a mild paralysis. Accepted, that various cases of Erb's paralysis differ as to the degree, the disability is proportional to the severity of the contracture. Prevent the contractures, and the severe deformities are eliminated. Splints have been devised to maintain the arm in the correct position—abduction with external rotation for most cases. The same purpose can be accomplished by physio-therapy—that is, passive stretching—and when properly supervised, this is a very satisfactory method of treatment. The case which has been kept free, that is, without severe contractures, is by far the most favorable for later surgery. Such procedures as the Tubby transplant of the pronator teres can then restore exceptionally good function.

Next on my list I have *tumors*. This subject of bone tumors should not be passed over superficially. In all fairness, I should either leave it out or spend the whole time on it. But I cannot resist making a few remarks which have particularly impressed me with their importance. Many surgeons feel that the orthopedist is not qualified to treat bone tumors. The orthopedist feels that he alone is familiar with bone physiology and pathology. As far as I personally am concerned, no one is capable of taking responsibility for the treatment of bone tumors who has not made a complete study of the subject and has kept up with the changing viewpoints of all groups—including the Bone Sarcoma Registry of the American College of Surgeons. Whether the surgeon is a general surgeon or an orthopedist is far less important than the abilities and experience of the individual.

There are two statements I would like to make concerning the subject of bone tumors: (1) Avoid combining radiation and surgery in the treatment of a giant cell tumor of bone. Codman advised against this years ago, and the Registry shows that a higher percentage of giant cell tumors become aggressive, or even malignant, when subjected to combined treatment, than when treated by either surgery alone or radiation alone. Choose your method of treatment at the beginning—and stick to it! (2) The second statement which seems of significance to me, was made by Ferguson two years ago. His analysis of results registered for osteogenic sarcomas justifies a rather astounding conclusion. Cases of bone sarcoma which are amputated early have the greatest mortality! This certainly is contrary to what one would expect, for we teach that, in general, the earlier a tumor is attacked the better are the chances of survival. I have not time now to give you Ferguson's explanation of the apparent paradox. The plan of treatment he advises is to use radiation on the tumor until it has reached one of its relatively regressive periods in the ordinary cycle of exacerbations and remissions. This subject is being further investigated.

What's new in *osteomyelitis?* Sulfonamides, of course! What have they done? They have been responsible for the first series of cases of acute osteomyelitis which can honestly be called favorable. Up until August, 1941, the only statement which could be definitely made about the reports on acute osteomyelitis was that the prognosis was bad, as one reviewer put it. Since then, Hoyt and his group have been adding more and more cases—all with about this same history: Typical case of acute osteo in the early stage. Positive blood cultures. No x-ray changes as yet. Sub-periosteal abscess aspirated with growth of staphylococcus aureus. Patient started on full doses of sulfathiazole, plus supportive treatment for a septicemia, transfusions, adequate fluid turnover and enriched diet. Immobilization of painful member, sedation if needed. No surgery, but conservative treatment continued for two weeks after temperature subsided—this meant six weeks or more of sulfathiazole in most cases. What happened? There were no deaths, and the last I heard a group of some twenty-five successive cases had been observed. The blood culture became negative; later, aspirations of the abscesses yielded *sterile* pus. X-rays showed less destruction of bone, but the most amazing part was the report of sequestrae being observed to separate and then to re-vascularize.

I can do no more than pass this information on to you, as I have received it. I can assure you, as soon as I am in a position to do so and have an early acute osteo to treat in a child, I shall try this regimé!

The sulfonamides have also given us a more op-

timistic outlook for the case of chronic osteomyelitis. I know from personal experience that about half the chronic cases can be saucerized and closed primarily if sulfathiazole (or, better yet, a mixture of sulfanilamide and sulfadiazine) is used locally and systematically. What the end results will be, I do not know as yet, but, when carried out at the proper stage of the disease, primary closure can be done in most cases.

Next on my list is the subject of *hallux valgus*. Everyone treating this deformity has settled down, I'm sure, to one or two favorite operations. I have no quarrel with anyone's procedures, but would like to turn this observation over to you for whatever you may think it worth. The Keller operation, that is, resection of part of the phalanx to produce a pseudoarthrosis in place of an arthritic joint, is an operation that makes the patient happy. Originally we limited its use to the elderly cases, but I have come to the conclusion that, even for younger people, when there is no x-ray evidence of arthritic changes in the inter-phalangeal joint, the Keller operation is not only justified but is the procedure of choice.

For *club feet*—Kyte has answered any questions as to the best treatment. He has increased his incidence of good results, using wedging plasters alone, to something better than 90 per cent. Recently Coutts published a modification of Kyte's method which I can heartily endorse on the basis of personal experience. This technique includes the use of elastic adhesive bandage applied directly to the skin, over which is rolled a short cast. The better cast, made possible by the elastic bandage, allows easier and more effective wedging.

Speaking of *feet*, is there anything new for the care of those painful adult feet we all know so well? I doubt if there is anything worth while which was not appreciated long ago by Hoke. I refer you to him. Remember the importance of peroneal spasm, and its significance. Your choice of rigid *versus* elastic support must be made by you, but I believe each has its place. In my own mind one of the most important factors in properly balancing the feet is *control of the heel*. Exercises should never be forgotten, nor should the importance of the circulation. Many painful feet are arthritic feet; use general conservative measures in addition to the purely mechanical ones.

Low back pain—who am I to say anything about it? Each authority has his own feelings about the subject, and many differ as to this single point—how to evaluate the flood of thought on intervertebral disc—and fit it into the already complex problem of low back pain. Herniation of the intervertebral disc is unquestionably the cause of many cases of unilateral sciatica which has been unrelieved by ordinary orthopedic measures, but the best teams cannot diagnose and completely relieve symptoms in more than about 70 per cent of cases. There is still a place for more conservative measures than decompression and spinal fusion. Some of these conservative measures which I can vouch for involve the principles of Williams. Many cases of low back pain can be relieved by rest in a position which allows the lumbar spine to flex, as by the support of the bent legs on a Gatch bed. Also, I would hate to have to do without plaster jackets. For the acute strain we all know how much a good adhesive strapping is appreciated. If you can apply a *good* strapping, fewer patients will end up in the hands of the chiropractor. The injection of a local anesthetic, for certain cases of low back pain, as well as for some with sciatica, is a procedure worth being acquainted with. Haggard has written much about it. All that the text-book said, still goes. Foci of infection, posture, foot balance, and so on—each deserves due consideration in treating the low back.

The *shoulder* comes next for consideration. Have you ever seen a middle-aged woman holding her arm tightly to her side, complaining so bitterly of pain in the deltoid region and down the outside of the arm that you suspected she was a hysteric? You probably have. It is possible to cause the most dramatic change imaginable if, as is most likely, this person has an acute sub-deltoid bursitis. If a needle is passed to the point where the two inflamed bursal surfaces are opposing, and a few cc. of 1 per cent novocaine is injected to balloon the bursa and separate the walls, that hysterical individual will become your everlasting friend. Treatment of the chronic shoulder is less dramatic, but, when combined with deep heat and mechanical measures to regain lost motion, the needle is again a valuable instrument. Often calcium can be irrigated from a chronic bursa—again with everlasting gratitude on the part of the patient. All painful shoulders, how-

ever, are not bursitis. The syndrome of the torn supraspinatus tendon is deserving of consideration. Codman, I believe, has done most to clarify this subject. He stresses the point that a history of strain, causing sharp pain at the greater tuberosity of the humerus, followed by inability to initiate abduction of the arm, usually indicates a torn supraspinatus tendon. If the tear is complete, open repair by suture must be done.

I have left the subject of *poliomyelitis* until last, for I hesitate to discuss a subject which has recently attracted so much attention and comment. The problems of polio, however, are much the same as they were three years ago, so perhaps I can talk a little about it just as though nothing had happened since then.

The epidemiology of poliomyelitis has not been solved. Until it has, I expect that every epidemic which occurs must necessarily be accompanied by more fear and dread, among the laity and profession alike, than any other disease. Once we know how to control its spread, the outlook will be brighter. The evidence points toward the fact that transmission is by droplet infection, spreading the virus to another's nasal mucous membrane, thence to travel up the olfactory nerve to the brain stem, just as was taught in the past. The virus has also been recovered from the intestinal tract, opening up the possibility of a score of different vectors previously not considered. In the end more than one means of transmission may prove possible. Here's hoping this difficult problem will soon be solved.

At present there is a choice of good methods of treatment during the acute stages. The old and conservative method is to put the member at complete rest until the balance of muscle innervation has become stable; then restore function to the joints and uninvolved muscles by physio-therapy and guarded use.

With much enthusiasm and publicity another method of treatment has been recently popularized, as we know so well. In my mind it seems criminal to allow any method of treatment in medicine—regardless of how encouraging it may seem at first—to be placed before the laity as the Kenny treatment has been. Many people really believe there is in existence today a *cure* for poliomyelitis. If only that were true! I sincerely hope that there is not another epidemic of the more severe type of cases while so many people have this pleasant idea in their heads. If that should happen, there will be many disappointed and bitter parents. Even though we have no cure, we do have a better method of treatment. Sister Kenny is by nature a person of such thoroughness and enthusiasm that, when *she* applied physio-therapy to cases of acute poliomyelitis, her results were much better than the physiotherapists themselves had had. Sister Kenny, as Hart recently said, has brought out not new principles but old ones, salvaged from a disorganized field of physio-therapy, and has placed them safely in the hands of the medical profession.

Naturally, when motion is maintained throughout treatment, the period of remobilization after treatment is eliminated. So, case for case, the Kenny-treated patient is farther ahead of the immobilized patient by about twice the time interval of immobilization. Several years will be required to tell how the two methods compare as to actual end-results. *But*—and this is an important but—unless the treatment by packs, passive motion and early muscle training is carried out as thoroughly and carefully as Sister Kenny does it, the results will be disappointing—and, as before, will give way to the less dangerous, less costly, less difficult method of complete rest.

Regardless of which method of treatment has been used, there will be about 50 per cent of all cases with some residual paralysis. For these cases, there is still the same choice of reconstructive operations—with minor refinements from time to time. A good arthrodesis of the foot is one of the most satisfactory operations I know. It stands the test of time and abuse, and I have never yet seen a properly stabilized foot which was painful. Arthrodesis of other joints has its place, depending on the individual circumstances. Muscle transplants, likewise, can contribute much in certain cases. In short, despite the contribution by Sister Kenny of an excellent method of treatment for acute poliomyelitis, there will still be residual deformities in some instances, and many of these will require a long program of reconstructive surgery.

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REMARKS ON THE TREATMENT OF MENINGITIS*

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Meningococcic meningitis has been, from the ages, a dreaded disease, especially so thirty or forty years ago. In the days before the advent of serums those unfortunate enough to have meningitis suffered severely and those who lived nearly always had some sequelae.

Early treatment consisted of supportive treatment only. In this the mortality was terrific; as in the pre-serum days in the United States the mortality was 80 per cent; in France 75 per cent; in England 70 per cent; and in Germany 60 per cent. Later, continuous or frequent spinal drainage was advocated and tried with some degree of improvement in the mortality statistics but the complications were not reduced remarkably.

The advent of serums has changed the picture from the very start. With the refinement of serum, and early diagnosis, the mortality was gradually reduced to about 33 per cent. Even then the treatment was expensive, results were disappointing, and only the very rich or the very poor, in the endowed clinics and sanatoria, could afford adequate treatment.

Meningitis may be divided into three stages: *First,* the carrier stage: tonsillitis, pharyngitis and conjunctivitis. In the *second* stage the patient may go to bed where he is more comfortable, curled on his side, knees up, and head bent towards them. He is extremely apathetic, has loss of facial expression, lowering of voice, and complains of being sore all over. It is during this stage that the rash appears. The *third* stage is bursting headache, vomiting, delirium and coma, stiff neck and positive neurological signs.

The dreaded complications of meningitis are panophthalmitis, endocarditis, pericarditis, otitis media, purulent arthritis, or internal hydrocephalus, and various cranial nerves or combination of nerves are affected.

A new day has advanced in many fields of medicine with the advent of chemotherapy but none has surpassed the amazing results obtained by chemotherapy in meningococcic meningitis. Meningitis, with all its terrors, has been reduced in its seriousness to a relatively simple infection. It is still not to be ignored, but its high mortality and almost insurmountable difficulties have been reduced to a point that the best results can be obtained by us all and the expense of treating the disease is well within the purse of the poor as well as the rich.

A review of current literature will establish our progress and show the improved results, even in a finer choice of the sulfonamide group. Banks,[1] in 1941, reported a series of 96 cases of cerebrospinal fever with two deaths. In 52 cases sulfathiazole was used after one or more preliminary doses of sulfapyridine, and in 44 cases sulfathiazole was used alone. The fatality rate of cases treated, mainly with sulfathiazole, was 2.1 per cent. This compares favorably with previously treated cases with serum and sulfanilamide and with sulfanilamide or sulfapyridine alone or combined. He concludes, "sulfapyridine is equal in potency to sulfathiazole in treatment of meningococcic meningitis". Banks[1] recommends a 5 per cent solution of sodium salt of the drug in all cases of severe vomiting.

Hodges and Strong[2] report on 110 cases of meningococcic meningitis in Sydenham Hospital in Baltimore, from January, 1938, to February, 1942. Twelve of the 110 patients died, a mortality of 11 per cent. In studying these cases there were only

*Read before the forty-seventh annual meeting of the Seaboard Medical Association of Virginia and North Carolina at Wilson, N. C., December 2, 1942.

2 deaths in a series of 59 cases in children under 15 years of age. Only one of the 10 infants under 1 year of age died.

The incidence of youth is clearly shown in this series. It is interesting to note in Table I that in 57 cases in which sulfanilamide alone was used there was 17.5 per cent deaths and 53 cases in which sulfadiazine, sulfapyridine, and sulfathiazole were used there was only 3.8 per cent of deaths.

TABLE I

Effect of various sulfonamides:

DRUG	CASES	DEATHS	% FATALITY
Sulfanilamide	57	10	17.5
Sulfapyridine	7	0	0.0
Sulfathiazole	36	2	5.5
Sulfadiazine	10	0	0.0

In this series of cases there were the usual number of complications. There was permanent bilateral eighth nerve deafness in 7 cases. One patient had permanent unilateral fourth and seventh nerve destruction in addition to eighth nerve deafness. There were 5 cases of arthritis, of which all the patients recovered.

Bruce,[3] in reviewing Dwight and Thomas' work in meningitis in an epidemic in Halifax, Nova Scotia, reports treating 82 cases with sulfapyridine with 7 deaths, or 8.5 per cent mortality. His conclusions are that meningococcic meningitis responds better to sulfonamide drugs than it does to serum treatment, given either intraspinally or intravenously.

Kasich and Shulman[4] review a series of reports dating back to the serum treatment days and found varying mortalities from 15 to 50 per cent, i. e., Hoyne's report of 85 cases treated with antitoxins with 23.5 pr cent mortality. In another series of cases Dr. Kasich and Shulman gathered 211 cases with a mortality of 45.9 per cent. There are other observers' reports listing 96 cases treated with antitoxin intravenously with a mortality of 15.9 per cent.

Banks,[5] in an earlier report, reviews 65 cases with serum in large intravenous doses and with sulfanilamide in various doses, resulting in 8 deaths or mortality of 12.3 per cent. Banks later reported treating 72 patients with sulfanilamide and sulfapyridine with only 1 death, a mortality of 1.4 per cent.

Quequiner[6] reports 271 patients treated with sulfanilamide alone. In this series he had 27 deaths, or a mortality of 10.7 per cent.

In the original report of Kasich and Shulman,[4] they treated 12 cases—six by combined methods of serum and chemotherapy, and six by chemotherapy alone. They conclude that chemotherapy is the method of treatment alone, and is not benefited by serum when one takes into account serum sickness and serum reactions and sensitivity.

Dingle and Thomas[7] treated a series of 13 patients with sulfadiazine with only one death. This death occurred ten hours after admission to the hospital. The others had a prompt recovery.

Campbell[8] gave an excellent review of patients treated by serum and sulfonamides. He had 40 patients treated with serum alone. There were 20 deaths, or 50 per cent mortality. In a series of 10 patients treated with serum and sulfanilamide, there were no deaths. He concludes that chemotherapy, alone or combined, is the method of choice for treating meningococcic meningitis. He has magnificently culled from literature the following table from August, 1937, to January, 1941. These results may include some of the material previously quoted.

TABLE II

DRUG	CASES	DEATHS	% FATALITY
Sulfadiazine (alone)	13	1	7.6
Sulfathiazole (alone)	70	3	4.6
Sulfapyridine (alone)	588	23	3.9
Sulfanilamide and Sulfapyridine	214	17	7.9
Sulfanilamide (alone)	588	66	11.2
Serum and Sulfanilamide	165	20	12.1
Serum	1,109	349	31.4

This series of 2,747 cases represents the work of Dr. Campbell, and is quoted from his article. In using the drug it is advisable to continue dosage from 3-5 days after temperature is normal.

One cannot help but be overwhelmingly impressed by the tremendous reduction of mortality from the use of the sulfonamide group—a reduction not in theory but in actual fact.

Better results will be obtained in the future by early diagnosis of this disease, and adequate treatment. Adequate treatment consists of proper fluid balance, caloric intake, and sufficient amounts of drug maintained over proper periods of time. In many cases our failures can be summed up by "too little and too late". Closer analysis of our failures will show that certain concurrent diseases have modified our results, some of which are heart disease, coronary occlusion, chronic alcoholism. The literature already quoted shows the relative difference in

our fatalities in children and the higher age group. I sincerely believe that deaths in the higher age groups were due largely to intercurrent general conditions that were present when the disease struck, and many deaths from meningitis in the older age group were complicated by advancing degrees of senility.

Routine cannot be like a rubber stamp but, in the treatment of meningitis, there are some definite criteria that must be carried out in order that our results will fall in line with the results of the findings of other men. Dingle and Finland[9] have worked out a splendid outline which is simple and to the point—once the diagnosis has been made. I am inclined to believe the diagnostic spinal tap is all that is necessary, for, apparently, we have very little to be gained by further spinal taps.

I would like to give here a slightly modified version of Dingle and Finland's[9] General Outline of Treatment:

(1) Immediate institution of chemotherapy.
(2) Drugs of choice—sulfapyridine and sulfadiazine.
(3) Intravenous—.1 gm. per kilo. of body weight for an initial dose as a 5 per cent solution of sodium salt in distilled water, or a 2 per cent or less in physiological sodium chloride solution.
(4) Parenterally—*Subcutaneously* as a .5 per cent solution in normal saline.
Intramuscularly as a 10-33 per cent solution (not recommended).
(5) Orally, a similar dose divided into 4-6 equal amounts over 24 hours. Oral administration is recommended for all further therapy after the first two days.
(6) Correction of dehydration—5 per cent solution of dextrose up to 6 per cent of body weight.
(7) Determination of sulfadiazine and sulfapyridine blood levels (10-15 mg. per cent ideal).
(8) Determination of hemoglobin, white and red blood count, and urinalysis daily.
(9) Continuation of sulfanilamide therapy. Continue sulfadiazine or sulfapyridine 2-5 days after recovery.

Dingle and Finland advocate the use of serum when the patient fails to respond in 24 to 48 hours.

CASE I.[10]—The patient was a white male, 9 years old. Admitted to the hospital October 31, 1942, complaining of general malaise and vomiting. He was seen the day before in his home. His past illness was negative save history of asthma.

Examination showed a rather under-nourished boy in semi-coma. He could be aroused with difficulty. His pupils reacted to light; chest normal; heart slow; pulse of good quality. He had stiffening of the neck and a positive Babinski. His spinal count was 1580; differential 20 per cent, lymphatic 80 per cent. Poly smear showed the meningococcus to be present. Globulin was greatly increased; sugar 83 mg.

The temperature on admittance was 101 and went to 103 in a short time. The patient had sulfadiazine gr.xv q.4 hrs. for 24 hours; at the end of this time the blood level was 11 mg. per cent per 100 cc. On November 1, 1942, the dosage was cut to grs.xv q.6 hrs. The respective readings were 11/2—17.1 mg.; 11/4—8 mg. per cent; 11/5—11 mg. per cent; 11/6—10.4 mg. per cent. The temperature dropped and on the second day it was 100.2; the third day it was 99.6; and on fourth day 99.4. The sulfadiazine was discontinued 11/10/42. The patient made an uneventful recovery, receiving in addition only supportive treatment.

CASE II.[10]—This patient was a white female, age 4 years, who entered the hospital November 2, 1942, at 5 P. M., with a temperature of 101, complaining of fever and chills, vomiting and abdominal pain of two days' duration. She gave history of convulsions the day before and of vomiting the day of admission. Physical examination was essentially negative except for some stiffness of the neck. Spinal puncture showed cell count of 10,000; 95 per cent polys and 5 per cent lymphocytes. Meningococcic organisms were seen in the smear.

On November 2, 1942,, the patient was given sulfadiazine, tab. ii (xv grs.), every six hours, after which the dose was reduced to tab. i (7.5 grs.). On 11/4/42 sulfadiazine was discontinued, then resumed the next day in half tablet doses every six hours. This was continued to 11/12/42, at which time it was discontinued. The blood sulfadiazine level on 11/3 was 11.7 mg. per cent; 11/4, 17 mg. per cent; 11/5, 5 mg. per cent. The temperature on admission was 101; it did not go higher the second day; the third day 99.2; fourth day 99.2, and from the sixth day to the thirteenth day only one reading was as high as 99. The patient was discharged on

the thirteenth day with an uneventful recovery. She received only supportive treatment in addition to the above mentioned doses of sulfadiazine.

CASE III.—(Personal Case). C.W., colored male, age 25 years; entered hospital on October 18, 1942, completely unconscious, wild and delirious, with temperature of 103.2. This patient had been seen the night before when a diagnosis of influenza had been made. The physical examination on admission revealed a completely delirious negro male, with knees drawn up, neck stiff, and a positive Kernig sign.

This patient, upon arrival in the hospital, had a spinal puncture. The cell count was 18,500 under no pressure. He was given 5 gm. of sodium salt in 100 cc. of distilled water, followed by 1000 cc. 10 per cent D.R.L. solution. He became rational towards evening of October 18th, and was able to take the drug by mouth. He was given tab. ii (xv grs.) every four hours from that time for six days. The sulfadiazine level only reached 5 mg. per cent. A second spinal tap on the 21st showed 5300 cells. His temperature on the third day was 99.6. His sulfadiazine was continued at the above dosage and the temperature returned to normal on the sixth day. He remained in the hospital for ten days. His chief complaint was a bursting headache which was controlled by small doses of morphine. His only complication was arthritis of the left knee. This cleared upon rest in bed.

After dismissal from the hospital he was given sulfadiazine tab. ii every six hours for five days because of the arthritic condition.

SUMMARY AND CONCLUSIONS

Some of the recent literature on the treatment of meningitis has been reviewed. The specific trend to chemotherapy has been shown and its most gratifying results have been noted.

The best uniform results were obtained by having a sulfonamide concentration of 10 to 15 mg. per cent, and maintenance of this for three to four days after the temperature has returned to normal. The early treatment by adequate chemotherapy shows satisfactory, uniform results. The use of chemotherapy is simple, less toxic to the patient, and reduces sequelae of the disease more than any other form of treatment.

In days of over-crowded hospitals and inadequate nursing care, we can easily use this method to treat meningococcic patients in the home without undue criticism.

The results from the treatment of hundreds of cases cited shows definitely that chemotherapy is the method of choice, and sulfadiazine, sulfathiazole, and sulfapyridine the drugs of choice. Further statistical study may place one of these as the sole drug of choice.

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THE PHARMACIST LOOKS AT THE PHYSICIAN*

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This paper has suggested itself as a possible step on the road to closer cooperation between two public health professions—pharmacy and medicine. It is not intended to constitute a whitewashing of one, nor is it a sermon to the other. The material to follow is predicated on the assumption that a *greater* degree of collaboration between pharmacists and physicians would be beneficial to the public and, incidentally,

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to our profession.

It is recognized that there are unfortunately some pharmacists who fail to conform to the general pattern assumed in this paper. It is hoped that pharmacy is approaching the day when it will learn to discipline its licensees as medicine does its own recalcitrants. Meanwhile, it is suggested that it would be well worth the physician's time to determine the best pharmacists in his locality and send his patients to them.

How, then, does the pharmacist look at you, the the physician (Perhaps this should be read rapidly, for as Emerson said, "In skating over thin ice, our safety is our speed".)

He admires and respects you, as men and women, for your training and ability. You have made greater academic advances than the pharmacist, and he is aware of that fact. Frankly, the pharmacist is rather envious of the psychological hold the physician has on the public, but very often he realizes that he would merit more confidence if he were willing to work as hard toward this end as have the physicians. The pharmacist feels he can, and would, furnish more valuable assistance if he received the proper encouragement. He has an ideal of service to the public and to the physician. However, the pharmacist feels that those he serves are not always entirely satisfied with his actions, and he is usually at a loss for an explanation. In a few cases, some bitter experiences have caused him to stubbornly, but wrongly, shirk from lending that assistance he can so often furnish with efficiency. The pharmacist feels the physician is careless in writing and sending in his prescriptions, in giving out samples, in referring to the charges for medicines, et cetera. Worst of all, he has a deep-seated conviction that the physician does not sufficiently trust his judgment or integrity on matters pharmaceutical. The modern pharmacist's professional training has taken four years, and he has a degree recognized by major graduate schools. That, Doctor, is the pharmacist's composite view of a composite you—a curious mixture of respect, admiration, envy, and vexatiousness. The only facets of that picture which need consideration here are the last two, (i.e., insufficient trust in the pharmacist, and thoughtlessness in certain actions) for they alone are really critical in nature. Those constitute an indictment which pains like an old intractable ulcer.

With war creating further demands on the time of both pharmacist and physician, these difficulties should be ironed out promptly. That is the reason our national association and yours have already had several meetings to plan closer cooperation between the two professions. "It appeared quite apparent that . . . a closer coordination between medical and pharmaceutical personnel was not only desirable but necessary in the face of present day needs"—this from a report summarizing the recent Cleveland conference of the A.M.A. and A.Ph.A., and published in your official organ, *The Journal of the American Medical Association.* It might be added that committees were appointed to continue this work and are actively engaged in the project.

Let us elaborate a bit on some of the points mentioned above in order to make their meaning perfectly clear.

It was mentioned that the pharmacist had an ideal of service, which is certainly true. Sometimes we, in the rather neutral zone of teaching, feel the retail pharmacist has *misdirected* his service ideals to the detriment of everyone concerned, both lay and professional. Let me illustrate one example of what is in my mind by a question from a recent examination in organic pharmacy. A hypothetical situation was set up as follows:

"You are about to open a Professional Pharmacy. Your contacts with three or four physicians who know you and trust your integrity and judgment will furnish the bulk of your prescription work. You therefore determine to stock a limited number of items of each type mentioned below:

(a) Name your choices in each group.

(b) Justify briefly your decision.

Note:—You should consider ranges of usefulness, variations in content, whether or not official, variety of forms for administration, etc.

(c) How would you explain briefly the general chemical nature of each product?

N.B. Read the above carefully.

Put your answers in the order indicated.

Use only products we have studied this quarter."

Then followed a long list of types of products ranging from androgens to zinc salts, only two or three of each class being required for this hypothetical stock.

You will note the emphasis on the ideal conditions under which the pharmacy was being opened. These physicians trusted the judgment and integrity of the pharmacist—they would use what he offered. Yet those members of the class with the most practical experience tried to justify their choices by saying "Whichever the doctor wants," or, "I'll stock what is ordered," and similar phrases. Is the meaning clear? The pharmacist wants to give service, for he, like you, belongs to a service profession. However, he is so accustomed to the practice of attempting to stock everything he has ever seen prescribed by various physicians, that even in the classroom these students failed to cerebrate accurately. The pharmacist cannot furnish reliable medications at a reasonable cost if he dispenses a different specialty every time the physician prescribes. His overhead, due to unnecessary duplication, is tremendous. There are about 76 digitalis preparations (excluding tinctures) on the market representing essentially three types of products. At least as many polyvitamin preparations are available. Examples could be multiplied *ad nausseam.*

Is it not obvious that a closer relationship between physician and pharmacist would benefit all concerned? A fair, though an imperfect example of a policy of cooperation is seen here at the M.C.V. Hospital with which many of you are connected. The pharmacy stocks three preparations of digitalis, and I fail to recall any special requests for others in the last 150,000 prescriptions, including all those for private patients. A very wise old physician of Richmond is said to be fond of advising the young men, "When you don't know, consult an expert." The continual visits of the interns to our hospital pharmacy speaks eloquently of the aid received there.

Important though it is, elimination of duplication would not be the only advantage to accrue to a closer relationship between pharmacy and medicine. For example, many legal safeguards have been erected for the public, both locally and nationally. The physician would learn to appreciate the responsibilities of both the pharmacist and himself, and better understand the why of some requirements. For instance, the doctor would know the necessity for many of the pharmacists' 'phone calls to obtain omitted information. Very often those calls "save face" for the physician when there has been an inadvertent error. The pharmacist faces more rigid and more frequent investigation of his handling of various drugs than you do. He wants to give service, but the physician's cooperation in promptly furnishing correctly written prescriptions for narcotics and other dangerous drugs is essential.

The pharmacist feels the physician is prone to distribute samples unnecessarily and thereby create certain incorrect impressions in the minds of the patients. He is injured in his relations with the public by the patients' assumption that the medicines are very inexpensive when such is rarely the case. However, the pharmacist realizes that samples furnish a convenient means of trying new medicaments, or testing new combinations of the old, and he has *no* desire to interfere with or contest your prerogatives.

The pharmacist does not suggest the length of time necessary to diagnose a case, nor set the doctor's fees. He would like to believe his time and charges were not indicated to the patients before they had brought the prescription to the pharmacy.

The crux of the situation from the pharmacists' point of view is this: too little trust is imposed in the integrity and judgment of the pharmacist. I submit that the modern pharmacist's knowledge and training will surprise and aid you if given a chance. He does not come to discuss these matters with you because he fears, perhaps wrongly, that he may be rebuffed. The pharmacist *knows* he and the physician should be drawn closer together for the good of the public, and, incidentally, the service of the public is the responsibility of both pharmacy and medicine. More contacts and conferences, and most, if not all, differences can be made to vanish. As physicians, you have the pharmacists' respect, their admiration, and their desire to serve. Give them the opportunity to help the public and you by using their professional knowledge to better advantage.

RECOMMENDATIONS FOR A VENEREAL DISEASE CONTROL PROGRAM IN INDUSTRY

Report of the National Advisory Committee on the Control of Venereal Diseases in the United States

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In order to assemble current authoritative information and to formulate basic principles applicable to a program of venereal disease control in industry, the Surgeon General has appointed an Advisory Committee to the United States Public Health Service. This Committee has outlined the objectives of such a program as:

A. MEDICAL AND PUBLIC HEALTH:

1. To find and refer for proper medical management all cases of venereal diseases among workers in industry.

2. To establish equitable policies for the employment of applicants and continuation of services of employees who have venereal diseases.

3. To coordinate the community and industrial venereal disease control programs.

B. EMPLOYEE:

1. To improve the physical condition of employees.

2. To reduce the number of workdays lost through illness or injury.

3. To provide job placement.

4. To prolong and increase the earning power of employees.

C. EMPLOYER:

1. To reduce compensation costs.

2. To lessen work interruptions and labor turnover.

3. To enhance production by increasing the efficiency of workers.

4. To minimize personnel problems.

In order to assure agreement on all phases of fundamental policy, the committee recommends that certain agencies be consulted in carrying out this program: the State labor department, industrial commission or similiar department of State government; the appropriate committee of the State medical society; the association representing employers; the labor organizations; appropriate voluntary health and welfare associations.

Responsibility for the administration of the program should be shared by the industrial hygiene and venereal disease divisions of the State health department. The program should not be inaugurated without a complete educational program. The employee should be convinced that adequate treatment protects both his health and his ability to earn a living, and the employer that not all cases of venereal disease are infectious, through an educational program before venereal disease control measures are introduced.

In order that the control program may be effective, preemployment examinations should be mandatory for all workers. Laboratory tests for syphilis and gonorrhea should be made a part of the periodic, reemployment or "return from illness" physical examinations which are the policy of the industry. The interval between examinations should under no circumstances be more than three years.

It is of utmost importance that the results of the medical examination be considered confidential between the worker and the medical staff. Information should be furnished to others only with the consent of the individual concerned or, failing this, on legal advice. The medical staff should make proper recommendations to the management as to the physical fitness of the employee for work. When the usual clinical record is kept in an open file, venereal disease forms should be filed in the medical department for the use of the medical staff only.

There is no reason for denying employment to an applicant or for discharging an employee because an examination has revealed evidence of syphilis or gonorrhea, provided:

1. That the employee agrees to place himself under competent medical management;

2. That, if the disease is in the infectious stage, employment should be delayed or interrupted until such time as a noninfectious state is established through treatment and open lesions are healed:

3. That when syphilis exists in a latent stage, em-

ployment should not be delayed or interrupted;

4. That employment may be deferred or denied when the individual is an industrial hazard;

5. That occupational readjustments of employees be made of individuals developing disabling manifestations;

6. That workers with syphilis in any of its stages be excluded from areas where there is exposure to chemicals which may produce toxic reactions, and those having cardiovascular syphilis or neurosyphilis should not be exposed to physiologic stresses;

7. That workers with gonorrhea should be allowed to work only under special medical observation during the administration of sulfonamide drugs.

The applicant or the employee whose examination reveals evidence of a venereal disease should be called to the industrial physician's office for a conference. He should be instructed as to the nature of the disease which he has in order that he may cooperate intelligently with the requirements of the program. He should be referred to a reputable source for medical attention and be furnished with a letter directed to his physician stating the results of the examination and what is expected of the employee as to regularity of treatment if he is to be employed. The industrial physician should receive a record of treatment at about monthly intervals. The names of individuals who have neglected or refused treatment should be turned over to the health department for appropriate action in bringing them back to treatment.

The plant physician making a tentative diagnosis of communicable syphilis or gonorrhea should without delay acquaint the appropriate health authority with the facts.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This white 39 year old gravida ten para nine was seen by a physician during the prenatal period. No abnormality was noted other than having influenza during the eighth month of pregnancy. She was in labor at the time of admission to the hospital. The temperature, pulse and respiration were 98.6—84—20. Three injections of pituitrin of 4 minims each were given and delivery was completed by low forceps, under chloroform anaesthesia, three hours and thirteen minutes after admission. The cervix was lacerated. At the time of the patient's return to her room she was bleeding freely. Two hours later the bleeding was profuse, at which time the vagina was packed with gauze. When bleeding recurred, oxygen and coramine were given. Death occurred three hours postpartum.

COMMENT

This has been classified by the Committee on Maternal Health as a preventable obstetrical death.

The delivery was by low forceps following small doses of pituitrin. The cervix was lacerated. Postpartum bleeding continued during a three hour period.

Bleeding, in this case, may have been from one of many sources but, with vaginal bleeding and a known laceration of the cervix, repair of the cervix might have afforded relief. With the present conveniences for plasma, and often for whole blood, a transfusion would have been in order during or following repair of the cervix. The bleeding was not thought by the physician to be sufficient to cause the patient's death.

In the case of a multipara, in labor at the time of admission to the hospital and making normal progress, the necessity or advisability of using measures to hasten delivery is questionable.

Patients should be kept in the delivery room and watched carefully in the presence of abnormal postpartum bleeding or, to make the statement in another way, a patient may be returned to her room when bleeding has been controlled.

The autopsy report showed that the patient had a pneumonia. This report is not to be discredited but, with a normal course, death was rather early for pneumonia to have been the primary cause.

MENTAL HYGIENE NOTES

Mental Hygiene Society of Virginia.

The Mental Hygiene Society of Virginia held one of its best programs at Roanoke on April 23. It was an all day and evening affair, but it was full of interest and held the attention of the large groups that filled the rooms at each session.

The morning and afternoon meetings were held for the members of the Virginia Conference of Social Work only. In the morning Dr. Samuel W. Hamilton, Mental Hospital Advisor of the U. S. Public Health Service, of Washington, D. C., read a most instructive paper on "The Problem of the Military Rejects and Casualties". The discussion of Dr. Hamilton's paper was conducted in a very interesting and enlightening manner by Dr. O. B. Darden.

Dr. David C. Wilson then followed, using the topic, "The Problem of the Civilian Maladjusted." This paper is worthy of the close reading of every person who is interested in making Virginia a better place to live in. Judge J. Hoge Ricks, of the Juvenile Court of Richmond, led the discussion on this paper by giving some very practical applications on his experiences in his court.

The afternoon meeting was given over to what may be termed Postwar Planning in Mental Hygiene, especially as it pertains to Field Mental Health Clinics. Dr. Joseph E. Barrett, State Supervisor of Mental Clinics of the Department of Mental Hygiene, and Mrs. Donna Banting Bemiss, Member of the Board of Directors and Treasurer of the Mental Hygiene Society, gave most interesting and instructive addresses. Dr. Barrett gave a general picture of the great need for a broad program of mental health prevention through clinics, and Mrs. Bemiss presented a blueprint of the clinic setup as it applies to the local community situation. These papers were discussed by Miss Wilhelmina Baughman, Intake Supervisor, Children's Bureau, State Department of Public Welfare, and Mrs. Margery Wyatt, Superintendent, Girls' Industrial School, Bon Air, and Mrs. Alyne Caldwell, Superintendent of Public Welfare, Pulaski, Virginia.

The evening meeting was open to everybody and quite a departure from anything ever tried before, with the general title of "Alcohol, a State and Psychiatric Problem." It was discussed from the standpoint of a member of the A. B. C. Board by Senator Hunter Miller, and of the psychiatrist by Dr. Robert V. Seliger, of Johns Hopkins Medical School of Baltimore, who is a national authority on the treatment of alcoholism. The general conclusion was that drinking alcohol to excess is bad for the individual drinker and to most everything else it touches.

A luncheon and business meeting was held at noon, which resulted in the election of the following officers and Board members to serve the Society in the coming year:

PRESIDENT—Dr. Joseph E. Barrett.
VICE-PRESIDENT—Mrs. Harvie DeJ. Coghill.
SECRETARY—Dr. Mabel F. Martin.
TREASURER—Mrs. Donna Banting Bemiss.
EXECUTIVE SECRETARY—F. W. Gwaltney
NEW BOARD MEMBERS to fill the terms of these expiring in 1943:

Dr. J. C. Faw, Richmond
Major Rice M. Youell, Richmond
Dr. F. D. Wilson, Norfolk
Dr. Frank H. Redwood, Norfolk
Mrs. Harvie DeJ. Coghill, Richmond
Mrs. Morton G. Thalhimer, Richmond
Dr. Jacques P. Gray, Richmond
Dr. Rex Blankinship, Richmond
Dr. Mabel F. Martin, Richmond

Dr. Frank H. Redwood, President of the Society, presided at all meetings. Dr. Howard R. Masters was program chairman.

F. W. GWALTNEY,
Executive Secretary.

CURRENT INFORMATION ON SYPHILIS

Sponsored by
COMMITTEE ON SYPHILIS CONTROL
MEDICAL SOCIETY OF VIRGINIA

Present Status of the Intensive Arsenotherapy of Early Syphilis

LOREN W. SHAFFER, M.D.,*
Detroit.

The 5-day massive therapy for early syphilis has aroused great interest. If early (primary and secondary) syphilis can be cured in 5 days with intensive treatment, the control of syphilis will be revolutionized. This treatment, if further observation proves that it is both safe and effective, offers the greatest advance in the therapy of syphilis since Ehrlich's introduction of salvarsan. The two main problems in syphilis control are the finding and holding of early cases until they have received adequate continuous treatment for 18 to 24 months. If treatment can be completed in 5 days, the almost insurmountable problem of holding the cases for treatment will be solved.

The suggestion that very large doses of arsenicals might be given with safety in the treatment of syphilis was first made by Dr. Louis Chargin, syphilologist at the Mount Sinai Hospital and the New York City Department of Health. It was based on the observations showing that "speed shock" could be prevented by very slow intravenous administration (60-90 drops per minute). Such administration also permitted the introduction of remarkably large amounts of highly toxic substances with complete impunity. Such work with the arsphenamines was begun in 1933 on Dr. Baehr's service at the Mount Sinai Hospital, New York City.

In the first series, 25 patients with early syphilis were treated by Chargin, Leifer and Hyman. Neoarsphenamine in doses of 4 to 4.5 gm. was administered by continuous intravenous drip in 5 days; 87 per cent of these patients were cured, as far as it is possible to determine, at the end of 5 years. No additional patients were treated until 1937, when this method of treatment was resumed under a committee. Eighty-six patients with primary and secondary syphilis were treated with neoarsphenamine and by the method used in the first group. Two-year cures were reported in 91 per cent of these cases. The incidence of toxic reactions was high, especially of neuritis. The only treatment fatality in the two series (111 patients) was due to hemorrhagic encephalitis. This caused the discontinuance of neoarsphenamine in the fall of 1938. Arsenoxide (mapharsen) was substituted.

When mapharsen was first tried, no experience with its use in larger dosage was available. The usual recommended dose is 1/10 of the dose of neoarsphenamine. Since 4 to 4.5 gm. of neoarsphenamine was used in the preceding series, a total dose of 0.4 gm. or 400 mg. of mapharsen was administered by intravenous drip similar to that used with neoarsphenamine. It soon became obvious that the toxicity of mapharsen was so slight that increased dosage could be safely employed. Also, because of failures with smaller doses, it became desirable to try larger doses. The dosage was increased to 700 mg. and then, by slow stages, through levels of 800, 1,000, 1,100, and, finally, to the newly recommended standard dosage of 1,200 mg.

Mapharsen is administered at the rate of 240 mg. per day, for 5 days. The total daily dose of 240 mg. of mapharsen is dissolved in 2,400 cc. of 5 per cent glucose solution and is given at the rate of 20 mg. per hour and continued for 12 hours. This represents a daily dose of 4 times the amount usually injected (60 mg.) and a total of 20 standard doses in 5 days.

Approximately 330 cases were treated with mapharsen by the New York group. The most frequent reactions encountered were gastrointestinal upsets and secondary fevers which usually occurred on the day after treatment was completed. Such febrile reactions were frequently associated with a transient toxic skin eruption. Exfoliative dermatitis, blood dyscrasias, evidence of renal damage, or marked liver damage, were not encountered. Neuritis, which occurred in 35 per cent of the cases

*Reprinted in part with the permission of the writer and publisher (Venereal Disease Information, April, 1943).

treated with neoarsphenamine and was often quite severe, occurred in only 1.6 per cent of the mapharsen series and was very mild in character. The most feared reaction is hemorrhagic encephalitis, of which there were 2 cases in the neoarsphenamine series (111 cases), 1 resulting fatally, and 3 in the mapharsen series (330 cases), 1 of which was rather severe but resulted in recovery, and 2 mild cases.

A meeting was called in New York City in April, 1940, to which representative syphilologists and venereal disease control officers were invited. The details of the continuous drip method were presented and the results discussed. Those interested, and in a position to carry on this work, developed new centers for the further use of this method of treatment. In general, the results parallel very closely those reported in the New York series. There had been a total of 5 fatalities among 1,800 patients receiving this treatment up to that time, giving an incidence of fatal reactions of approximately 0.3 per cent. This work is being continued, and data from several thousand cases will soon be available.

Various modifications of the original New York continuous drip method have been tried in different places throughout the country. In Detroit we have developed a rapid drip modification which consists of the administration of approximately 1.2 mg. of mapharsen per pound of body weight to a maximum dose of 180 mg. dissolved in 1,000 cc. of 5 per cent glucose solution. It is given by gravity (vacoliter), requires 60 to 75 minutes for administration, and is repeated daily for 5 days. It requires much less hospital supervision. It was hoped, even though the total dosage was decidedly less (750 to 900 mg.) than called for in the New York method, that its administration in a shorter period of time—approximately 1 hour—might prove equally effective. We have now treated approximately 430 patients by this method. We have had 1 case of toxic encephalitis with recovery and 1 case which terminated fatally.

We have had no failures in our Wassermann-negative primary cases. Our results have paralleled closely the New York series for Wassermann-positive primary cases, but have been decidedly inferior for secondary cases. This experience would indicate that there is a definite need for larger dosage, at least in cases with secondary syphilis. We have added bismuth to this treatment procedure beginning July, 1941, and believe that, with this addition, our results will prove more satisfactory. This will be discussed later.

Another modification of intensive treatment has been the multiple injection method. This consists of giving by syringe technic (10cc.) a dose of 60 to 100 mg. of mapharsen once or twice daily and repeating this dosage daily until a total of 1,200 mg. has been administered. A dose of 60 mg. may be administered twice daily for 10 days, 100 mg. twice daily for 6 days, or 100 mg. once daily for 12 days. Reports would indicate that the incidence of serious reactions is at least as high, and probably higher, than with the slow drip administration. Such methods are purely experimental and should not as yet be considered for general use.

Another modification of intensive therapy is the combined use of mapharsen and fever therapy. It is considered that the addition of fever therapy, instead of increasing, actually decreases the toxic effects of arsenic. In fact, Simpson's group has made a surprising observation in that patients, who have recovered from an arsenical exfoliative dermatitis and their allergic state proved by a recurrence after a single injection of 5 mg. of mapharsen, may be given standard doses without reaction if administered at the height of the febrile reaction. No extensive reports are available with this method. Its use will require special hospital supervision which limits its availability. This method will warrant further observation, however, and technical difficulties should not materially limit its usefulness if it proves safer and even more effective than other modifications.

One of the most interesting proposals has also been announced by Simpson and calls for only 1 day of treatment. The method consists of the intramuscular administration of 4 gr. of bismuth salicylate 24 hours before artificial fever therapy is begun. The patient is then placed in a fever cabinet and given continuous fever therapy for 10 hours with temperatures from 105° to 106° F. He is also given 120 mg. of mapharsen in divided dosage by syringe technic during the height of his febrile reaction. Simpson aims at reducing the time of administration of treatment from 5 days to 1 day by the combined used of fever, arsenic, and bismuth. Further reports on this method of treatment will be awaited with interest.

At the present time, therefore, intensive therapy

is being used in several different forms: the slow, continuous drip (New York City); the rapid drip (Detroit); the multiple injection (Thomas-Schoch); fever therapy plus multiple injections (Thomas-Simpson), and the 1-day fever-arsenic-bismuth method (Simpson). Experience gained from the use of these methods would at last suggest that the aim of treatment should be the administration of approximately 1,200 mg. of mapharsen in a 5 to 12 day period.

The addition of bismuth to this method of treatment is a recent, interesting development, and it is hoped that by the addition of bismuth the effectiveness of the method may be further increased without accentuating toxic effects and that a reduction in the total arsenic dosage will be possible. The period of observation is too short to reach any definite conclusions, but we have had practically no failures in the patients so treated. It is expected that bismuth will delay the occurrence of serologic or clinical relapse, but our experience with patients observed for more than a year makes us feel that the addition of bismuth is going to increase very materially the efficiency of our method of treatment. We have not had a single case of toxic encephalitis since starting to use this method (200 patients), and this makes us feel that the addition of bismuth is not going to increase our incidence of toxic reactions. The investigators using the other methods of intensive treatment also have added bismuth therapy, and it is expected that equally enthusiastic reports will be received.

At best, such methods of intensive therapy will probably have a limited field of usefulness for the average practitioner and the smaller venereal disease clinics. One very definite observation which we have made in regard to the use of these methods of treatment is that mapharsen can be given in larger and more frequent dosage than we formerly felt safe to use. There is an urgent need to develop a simplified method that can be used with safety on ambulant patients. Various attempts at such modifications are now being made.

Eagle is using a similar method of treatment for ambulant patients consisting of injections of mapharsen 3 times weekly for 12 weeks. This method is to be tried both with and without combined bismuth therapy. His system is based on experience with experimental therapy on 2,500 rabbits from which he concluded that the total curative dose of mapharsen is approximately constant whether administered in a few days or several weeks and that the margin of safety between the toxic and therapeutic dose is increased by prolonging the duration of treatment.

It is my belief that two methods of intensive therapy will develop from this program: the 5-day or even 1-day intensive method requiring hospitalization and special supervision, and an ambulant method giving 3 injections of mapharsen weekly for a total of at least 1,200 mg., probably combined with bismuth.

I have not discussed the details of technic, management, or reactions in this review. Before any physician attempts to use intensive therapy he should refer to the literature for such information. I have endeavored to present a short summary of the present status of intensive treatment and some of the outstanding modifications which are being tried. Many patients who have had intensive treatment will be seen at a later date by other physicians. Frequently these patients are subjected to further treatment by such physicians even shortly after intensive therapy has been completed, because their blood serologic reactions are still positive. In general, the rate of serologic reversal depends upon the degree of quantitative positivity of the serologic reaction at the start of treatment or on the duration of the infection. Strongly positive cases of primary and secondary syphilis usually require from 3 to 6 or more months for their serologic reaction to reverse to negative, while less strongly positive cases of early primary syphilis tend to show serologic reversal in 1 to 3 months. Therefore, a positive serologic reaction on a recently treated case does not indicate failure or necessitate further treatment on this basis alone.

The critical time for clinical or serologic relapse is between the third and ninth month and has usually been preceded by a dropping reagin titer to either negative or only slightly positive. A quantitative serologic test is desirable in following these cases. Such tests should be repeated at monthly intervals for at least the first year of observation and should be accompanied by very thorough physical examinations for evidence of mucocutaneous relapse. Physicians following patients who have had intensive treatment should consult the center at which the treatment was given, unless definite clinical relapse

has occurred, before deciding on future plans for these patients.

CONCLUSIONS

Intensive methods of treatment must still be considered experimental. The potential hazard, at least of short intensive courses, makes it necessary to advise that they should not be attempted by physicians without extensive experience in the treatment of syphilis. Further information is being rapidly accumulated, and it is expected that such experience will permit the establishment of a definite procedure to be recommended in the near future for use in private practice and in the military services. Intensive therapy is being tried in various types of latent and late syphilis, but its use in such cases is highly experimental and not as yet recommended. Its use should be restricted to previously untreated cases of early (primary and secondary) syphilis.

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for April, 1943, compared with the same month in 1942, and for the period of January through April, 1943, compared with the same period in 1942, follows:

	Apr. 1943	Apr. 1942	Jan.-Apr. 1943	Jan.-Apr. 1942
Typhoid and Paratyphoid Fever	8	3	44	45
Diarrhea and Dysentery	101	66	422	363
Measles	2,093	959	6,153	3,331
Scarlet Fever	168	103	779	594
Diphtheria	16	24	139	179
Poliomyelitis	0	2	10	3
Meningitis	111	16	495	68
Undulant Fever	3	2	9	8
Rocky Mountain Spotted Fever	0	0	0	1
Tularemia	1	1	23	19

EPIDEMIC MENINGITIS

From July 1942 to the present, the physicians of Virginia have reported 691 cases of Epidemic meningitis. This represents the greatest number of cases of this disease ever reported in one year's time in Virginia. The incidence of the disease is now declining. Only one-third of the number of cases are being reported as compared with the number reported two months ago. However, epidemic meningitis remains nine times above the weekly expectancy.

The seriousness of this disease is not to be minimized. Heretofore the cases of meningitis reported appeared to be rather benign. Within the past year many physicians have stated that the characteristics of the disease they encountered were of a more serious nature. An increasing number of patients have exhibited the petechial rash commonly found in epidemics. All too many have been acute fulminating cases with invasion of the blood stream, while some have exhibited the Waterhouse-Friderichsen syndrome. Cases of meningitis having the Waterhouse-Friderichsen syndrome show adrenal hemorrhages with subsequent death.

The State of Virginia is not alone in facing the problem of epidemic meningitis. The ratio in some neighboring states is found to be higher. Meningitis will decline with the advent of summer weather. With the increasing number of carriers produced by this year's flare-up of meningitis, there is a great possibility that epidemic meningitis will strike again in the coming year.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

The Northampton-Accomac Auxiliary

Held its April meeting at the home of Mrs. W. T. Green, Nassawadox, with Mrs. W. Carey Henderson as joint hostess. Mrs. O. R. Fletcher, president, presided. The Christmas gift of a bassinet and dishes to the Northampton-Accomac Memorial Hospital was announced, and a flower fund for sick members was started with a gift of five dollars from one of the members. At the close of the business meeting, a tribute was paid to the memory of Mrs. Griffin Holland, a former member of this Auxiliary.

A musical program, with two violins and piano, was greatly enjoyed, following which delicious re-

freshments were served. A food sale for general funds closed the meeting.

The July meeting will be an all-day picnic with "covered dish" luncheon at the summer cottage of Mrs. W. L. Cosby at "Silver Beach".

CATHERINE R. TROWER (MRS. HOLLAND),
Chairman, Press and Publicity.

Richmond Academy of Medicine.

We feel that we have been very fortunate this year in having such interesting speakers. At our January and February meetings, Mrs. Fred Shaw spoke on "Economic Life and Native Customs in the Philippines" and in March, Dr. E. C. Harper gave a talk on "Preparation for Emergency Medical Aid in Virginia".

The annual benefit bridge party was held on May 21st, the proceeds to go toward the maintenance of our room at the Sheltering Arms Hospital.

MRS. B. B. BAGBY, JR.,
Publicity Chairman.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Convulsive Seizures. How To Deal With Them. A Manual for Patients, Their Families and Friends. By TRACY J. PUTNAM, M.D., Professor of Neurology and Neurosurgery, College of Physicians and Surgeons, Columbia University; Director of Services of Neurology and Neurosurgery, Neurological Institute of New York. Philadelphia. J. B. Lippincott Company. 1943. xv-168 pages. Cloth. Price $2.00.

Hope Deferred. By JEANETTE SELETZ. New York. The Macmillan Company. 1943. 536 pages. Cloth. Price $2.75.

Stay Young and Live. Common Sense About Health in War Time. By J. CLARENCE FUNK, Sc.D., Director of Education, Virginia State Department of Health. The Dietz Press, Richmond, Va. 1943. Cloth. 125 pages. Price $1.75.

To the average lay reader, *Stay Young and Live* by J. Clarence Funk, Sc.D., is a delightful form in which to imbibe health precepts. Who cannot, except indeed the very youthful, be appealed to with the declared aim of prolonging or, in fact rediscovering, his youth? Dr. Funk writes in a clear, uncomplicated style with a refreshing strain of humor throughout.

The first seventeen chapters, covering eighty-five pages, deal with everyday health practices and common sense advice based on scientific knowledge. The possible exception to this might be found when extolling the virtue of swimming as exercise. Dr. Funk does not mention the injury done the nasal passages in diving and underwater swimming. The last forty pages present in a more sober fashion the dangers and caution signals to be observed when they arise.

Over twenty years spent in public health education well qualify Dr. Funk to write about the current needs of the day to meet the demand for more man hours on the job and fewer physicians available to care for illnesses. Therefore *Stay Young and Live* has a double purpose: to give patriotic citizens, intent on all war efforts, sound advice on maintaining health, and to show everyone anxious to enjoy a real enduring youth how to go about it.

J. R. P.

Bacteriology Laboratory Methods. By E. S. KING, M.D., Professor of Bacteriology, Bowman Gray School of Medicine of Wake Forest College; Bacteriologist to the Baptist Hospital, Winston-Salem, N. C. Charlotte Medical Press, Charlotte, N. C. 1941. 175 pages plus index. Cloth. Price $2.50.

The author presents his Bacteriology Laboratory Methods as a guide to laboratory work in medical bacteriology for both medical students and for students who do not expect to study medicine. The subject matter is divided into three parts: General laboratory procedures, introductory bacteriology and serology, general medical bacteriology and serology.

The description of the different methods is satisfactory; however, it would be helpful to describe the results to be expected after the methods (e.g., staining methods) have been correctly applied. The student would also appreciate the quoting of the page where a procedure which refers to some other method is mentioned. On page 99, e.g., the author remarks "See table II" without telling that this table appears on page 102. On page 100 it reads "Refer to fermentation table" (which happens to be the same table mentioned before). There are also a number of typographical errors which should be corrected in a next edition. May we ask for a revised and completed index at the same time?

F. J. v. G.

New and Nonofficial Remedies, 1942, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1942. Cloth. Price, postpaid, $1.50. Pp. 671—XCVII Chicago. American Medical Association, 1942.

Perhaps the most important feature of this new volume of New and Nonofficial Remedies is the radical rearrangement it has undergone, with a view to making the contents more accessible and therefore more valuable to the physician or other interested readers. The new arrangement is primarily according to therapeutic use, chemical classification being introduced by means of subheadings. In addition, the typographic style has been changed so as to give greater prominence to the products of individual manufacturers.

The Council has admirably performed its annual task of keeping the text abreast with the progress of medicine. The authoritative and compendious section of the sulfonamide derivatives is an outstanding example, as also is the chapter, Vitamins and Vitamin Preparations for Prophylactic and Therapeutic Use. Many other newly accepted drugs are listed also.

The indices of the new volume of New and Nonofficial Remedies are of the same order and plan as in previous editions. A general index lists accepted articles, including those not described. This is followed by an index to distributors in which appear all the Council accepted articles listed under their respective manufacturers. Finally, a bibliographical index is added for listing proprietary and unofficial articles not included in N.N.R. This includes references to the Council publications concerning each such article as has appeared in *The Journal of the A.M.A.*, Reports of the Council on Pharmacy and Chemistry, Propaganda for Reform, Vol. 1 and 2, or Reports of the A.M.A. Chemical Laboratory.

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association for 1941, with the Comments That Have Appeared in The Journal. Chicago. American Medical Association, 1942. Price $1.00.

The Council on Pharmacy and Chemistry recently issued the thirty-third edition of the Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association. This contains in compact form not only the reports of the Council which have been published in THE JOURNAL during the past year but also some additional reports which were not considered of sufficient importance to be published in THE JOURNAL. The reports may be divided into four classes: reports rejecting products as not being acceptable for inclusion in New and Nonofficial Remedies, reports omitted from New and Nonofficial Remedies products that have previously been accepted, reports on the nomenclature of various substances and reports in which the Council gives decisions of general interest or summarizes the latest scientific knowledge concerning certain topics.

The nomenclature reports deal for the most part with the Council's adoption of nonproprietary designations for comparatively new products such as diethylstilbestrol, menadione and sulfadiazine. Explanations are given for the omission at this time of products which have previously been included in New and Nonofficial Remedies.

The volume also includes the reports rejecting various products—which have either been submitted by the manufacturer or considered on the Council's own initiative—and which have been found not acceptable for inclusion in New and Nonofficial Remedies. Also incorporated is a brief summary of the decisions arrived at by the Council at its latest meeting.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Brunschwig, A.—The surgery of pancreatic tumors.

Dack, G. M.—Food poisoning.

Evans, E. A., Jr.—The biological action of the vitamins.

Habas, R. A.—The art of self-control.

Jackson, A. S.—The answer is your nerves.

Jordan, E. P., ed.—Standard nomenclature of disease and standard nomenclature of operations.

Kahn, F.—Man in structure and function.

Kugelmass, I. N.—Modern pediatric practice.

Loomis, F.—The bond between us.

Pohl, J. F.—Concept of infantile paralysis.

Slack & Gunderson—Laboratory manual for medical bacteriology.

Smillie, W. G.—Public health administration in the U. S.

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

VOL. 70 JUNE, 1943 No. 6

Nicholas Copernicus, M. D.

THIS year marks the 400th anniversary of the death of Copernicus. The fame of this great Pole is so overwhelming in astronomy, that we are apt to forget that he was a physician and practiced his profession successfully. Copernicus had a large practice among the poor and was much sought after by the nobility. As a matter of fact, he had many talents. It has been said of him that he was "a churchman by the wish of his guardian-uncle and by vocation, an artist for relaxation, a physician by training and predilection, an economist by accident, a statesman and a soldier by necessity and a scientist by the Grace of God and by sheer love of the truth for truth's sake".

These 400 years have seen great changes. Copernicus had no microscope nor telescope. Things were as they appeared on the surface, and it was dangerous to look below the surface, if indeed, that were possible. Printing was just out of its cradle and few people could read or write. The ruling classes were illiterate and the lower classes were little better than slaves. They belonged to the land and could not leave it except to fight their master's battles. Great kings such as Henry VIII of England and Francis I of France lived in less comfort than artisans do today, and in the realms of travel and communication they were the veriest tyros compared to the average mechanic of our time.

What sort of medicine did Copernicus practice? When he was a student at Padua, the general texts were those of Galen, Hippocrates, Avicenna and Averroes. The anatomy that was taught him was derived from the study of monkeys and lower animals. Versalius' de Fabrica which marks the beginning of modern anatomy appeared the year Copernicus died. The other medical disciplines were rhetoric, philosophy, mathematics and astronomy. Harvey's great work, the very foundation of physiology, lay in the future, as did also the pioneer work in pathology of Malighi and Morgagni. Practice in Copernicus' day consisted principally of purging and bleeding, and when to purge and where to bleed was determined by urine-casting or star-gazing.

The span of human life was short. In 1590 the average duration of life was 30.9 years as compared to 62.9 years in 1940. Between the high infant mortality, the wars

and the great epidemics that swept over Europe, the population was stationary. Medicine was helpless in the face of the great plagues. Small pox raged at will and one rarely saw an adult who was not pockmarked. Syphilis was even a greater scourge. Its treatment by mercury did not begin until after Copernicus (Thierry de Hery, Paré). Hundreds of leprosaria were scattered over Europe, but hospitals as we know them today were non-existent.

Medical Students On Army Pay

THE powers of the Federal Government have been the subject of controversy ever since the Constitution was ratified by the Original States. Hamilton led those who favored a strong central government, and Jefferson those who believed in local self-government with the Federal Government doing only what was beyond the powers of the States—foreign relations, postal system, etc. The balance of power between the Federal Government and the States has never been settled. It has been the cause of duels and of civil war. Through the years the central government has grown constantly stronger and that of the States proportionately weaker. Most of this gain has been brought about by constitutional amendments and legislative enactments. Each war accelerated the process. Rarely does the Federal Government relinquish any authority it has once gained, control over the railroads in World War No. 1 being a notable exception.

Even before World War No. 2, the government in Washington began to use a new technique in extending its authority. It began to use its tremendous monetary power. By offering grants or bonuses if the States would undertake certain measures in accordance with specifications drawn up in Washington, the Federal Government gained control of various functions of the States; notably roadbuilding, certain public health activities, and relief measures. Whether these measures are wise or not is beside the point. The fundamental principle involved is the important thing. If the trend towards centralization continues at the same rate, what will become of State Governments? Will they become merely historical vestiges like the urachus or the obliterated hypogastric arteries?

The Federal Government has recently extended its influence to the field of education. In this move they are using a two-edged sword—monetary power and the control of patronage. Except for girls and a few rejectees, it has absolute power over the youth of the land. Uncle Sam says to the able-bodied youth of the nation who shall go to school and what they shall study. The liberal arts colleges are hard put to justify their existence. In this total war such control is no doubt necessary. We hope that the love of learning will not be entirely suppressed. The U. S. S. R. seems to be able to take an interest in cultural affairs and at the same time do a pretty good job at waging war. It recently celebrated Sir Isaac Newton's 300th anniversary in seven different cities.

As to the future of medical education, Wingate Johnson in an editorial, "Quid Pro Quo", in the March issue of the *North Carolina Medical Journal,* paints a very gloomy picture. He points out that the recent provision for paying the medical student's tuition and maintenance, and allowing him fifty dollars a month pocket change is entirely unnecessary. There is not a medical school in the country that has not for years turned away more applicants than they could take. There is nothing to indicate that this condition would not have continued if the prospective medical student had been given a deferred rating by the draft boards. There was no reason for paying him. There must have been an ulterior motive, and this, Wingate Johnson more than hints, is the control of medical education.

Societies

Virginia State Board of Medical Examiners.

The following applicants were granted licenses to practice medicine at the meeting of the Board held March 24-27. There were no failures.

Dr. John Dean Adams, Martinsburg, W. Va.
Dr. Horace Allen Albertson, Richmond.
Dr. Joseph French Alsop, Prospect.
Dr. Lawrence Edward Banks, Sacramento, Calif.
Dr. Walter Protho Barnes, Jr., Charlottesville.
Dr. Margaret A. Barnes, Charlottesville.
Dr. Alfred Allen Berger, Staten Island, N. Y.
Dr. Monte LeRoy Binder, Richmond.
Dr. Charles Porter Blunt, III, Lynchburg.
Dr. Oliver V. Bobbitt, Jr., Charlottesville.
Dr. Armistead Page Booker, Charlottesville.
Dr. Katherine Brandon, Virginia Beach.
Dr. Catherine Harman Brewer, Brooklyn, N. Y.
Dr. Hugh Sharp Brown, Sayre, Pa.
Dr. Richard Booth, Jr., Lynchburg.
Dr. John Lewis Brown, Erie, Pa.
Dr. Charles William Byrd, Louisa.
Dr. Eugene Callaway, Jr., Selma, Ala.
Dr. Joshua Frye B. Camblos, Charlottesville.
Dr. Robert Edward Carr, Clinton, N. C.
Dr. Stuart Harrison Catron, Jr., Marion.
Dr. Donald Paul Chance, Charlottesville.
Dr. William Chapman Chilton, Memphis, Tenn.
Dr. James Logan Chitwood, Sylvatus.
Dr. William S. Clifford, Austin, Texas.
Dr. Custis L. Coleman, Lexington.
Dr. James Thomas Colley, Charlottesville.
Dr. Sidney W. Cohen, Portsmouth.
Dr. William C. Cook, Jr., Charlottesville.
Dr. Lewis F. Cosby, Jr., University.
Dr. John James Dobbie, Fairmont, W. Va.
Dr. William D. Dolan, Jr., Washington, D. C.
Dr. Edwin Marion Eastham, Washington, D. C.
Dr. Thomas Stilwell Edwards, University.
Dr. George Bleecker Ely, Charlottesville.
Dr. Paul Fleming-Holland, Maywood, Ill.
Dr. Hal Stanfield Floyd, Fairmont, N. C.
Dr. Thomas Carter Fowlkes, Selma, Ala.
Dr. Joe Lee Frank, New York, N. Y.
Dr. William Joseph Frohbose, Richmond.
Dr. Irvin Galin, Portsmouth.
Dr. Fleming Wood Gill, Richmond.
Dr. Giles Quarles Gilmer, Lebanon.
Dr. George R. Gish, Bluefield, W. Va.
Dr. Milton Sidney Goldman, Norfolk.
Dr. William Samuel Grizzard, Drewryville.
Dr. Dale Groom, Chicago, Ill.
Dr. George Lester Grubb, Charleston, W. Va.
Dr. William Dandridge Haden, Jr., Charlottesville.
Dr. William Joseph Hagood, Jr., Corbin, Ky.
Dr. Abran Ernest Handy, Jr., Stuart.
Dr. Rodgers Winters Harshbarger, Richmond.
Dr. William F. Harrell, Portsmouth.
Dr. Edward R. Hawkins, Marion.
Dr. Charles H. Henderson, Jr., Bonny Blue.
Dr. Charles Albert Hudson, Luray.
Dr. Cecil Guy Hupp, Washington, D. C.
Dr. Carl William Irwin, Charlottesville.
Dr. Lawrence A. Jacklin, Alexandria.
Dr. Fontaine G. Jarman, Roanoke Rapids, N. C.
Dr. William S. Johnson, Montclair, N. J.
Dr. Eugene Rhodes Johnston, Birmingham, Ala.
Dr. Charles Franklin Jones, Jr., Lynchburg.
Dr. George Barnard Kegley, Bland.
Dr. Eucebius Milton Kellam, Richmond.
Dr. Joseph Kessler, Leaksville, N. C.
Dr. John Marcus Kester, Jr., Columbia, S. C.
Dr. Melvin Bernard Lamberth, Jr., Woods Cross Roads.
Dr. Henry Byron Landaal, Waupun, Wis.
Dr. Andrew Martin Lang, Saint Cloud, Fla.
Dr. William Thomas Lawson, Richmond.
Dr. Randolph Leigh, Jr., Charlottesville.
Dr. Claude Marshall Lee, Richmond.
Dr. Francis Brown Lee, Monroe, N. C.
Dr. Earl J. Levine, Philadelphia, Pa.
Dr. Camillus S. L'Engle, Jr., Jacksonville, Fla.
Dr. Grace Kathryn Lightfoot, Richmond.
Dr. Myrtle Evelyn Logan, University.
Dr. Annie Belle LoGrippo, Richmond.
Dr. Donald David Markowitz, Jersey City, N. J.
Dr. Samuel Perry Marshall, Washington, D. C.
Dr. Frank Armstrong McCue, Bluefield, W. Va.
Dr. Charles Gillett McKendree, Charlottesville.
Dr. Dana Covington Mitchell, Jr., Bluefield, W. Va.
Dr. Robert Eugene Moffatt, Shelby, Ohio.
Dr. Thomas Lee Mosby, New River, Tenn.
Dr. John Sargent Morris, Jr., Richmond.
Dr. Dorothy Diehl Moore, Richmond.
Dr. Walter Shirley Nicklin, Jr., Alexandria.
Dr. Raney Archer Oven, University.
Dr. Herbert Rowland Pearsall, Roanoke.
Dr. William Robert Perkins, Jr., Washington, D. C.
Dr. John Brewer Petter, Cleveland, Ohio.
Dr. Carrol LeVan Plott, Delaware County, Pa.
Dr. John Russell Potter, Troutville.
Dr. Jess Averette Powell, Jr., Edenton, N. C.
Dr. John David Powell, Stuart.
Dr. James Guy Price, Charlottesville.
Dr. George Nicholas Psimas, University.
Dr. Robert Hubbard Putney, Jr., Elm City, N. C.
Dr. Lucile Welsh Richardson, Salem.
Dr. Charles Russell Riley, Atlanta, Ga.
Dr. Charles Lester Salmon, Richmond.
Dr. Charles Frederick Schneider, Charlottesville.

Dr. George Fay Schuster, Toledo, Ohio.
Dr. Percy Everett Schools, Jr., Richmond.
Dr. John Scott Shaffer, Wytheville.
Dr. James Avon Smith, Richmond.
Dr. Nelson Montgomery Smith, Winchester.
Dr. Russell Nelson Snead, Midlothian.
Dr. Joshua Price Sutherland, Charleston, W. Va.
Dr. Robert McKinney Tankesley, Chattanooga, Tenn.
Dr. Arthur Hastings Taylor, Jr., Richmond.
Dr. John Covington Tinsley, Jr., University.
Dr. Wiley Burns Trivett, Jr., Georges Fork.
Dr. Garnet Roy Tureman, Jr., Richmond.
Dr. Horace R. W. Vial, Richmond.
Dr. Donald Walters, Charlottesville.
Dr. Charles Harper Ward, Pocahontas.
Dr. Walter Motley White, Jr., Charlottesville.
Dr. John Knox Wilson, Richmond.
Dr. Robert Manton Wilson, Jr., Richmond.
Dr. Thomas Adams Witten, Richmond.
Dr. William Hugh Womble, Greensboro, N. C.
Dr. William Haller Woodson, Roanoke.
Dr. Edwin Wortham, IV, Richmond.
Dr. Harold Stanley Yood, Syracuse, N. Y.
Dr. Eugene James Yorkoff, Charlottesville.
Dr. Charles Gravely Young, Richmond.

Those licensed through endorsement of credentials are:

Dr. Samuel Righter Berenberg, Arlington.
Dr. Harry Randolph Boffman, Portsmouth.
Dr. Edgar Pasqual Copeland, Washington, D. C.
Dr. Natalie Johnson Deyrup, New York, N. Y.
Dr. Charles William Peterson, Pleasantville, N. J.
Dr. James Andrew Rooney, Newport News.

Albemarle County Medical Society.

At the meeting of this Society on May 6th, Dr. Harrison Flippin of Philadelphia, son of the late Dr. J. C. Flippin, former dean of the Medical School of the University of Virginia, gave an address on "Clinical Observations of Sulfamerazine and Penicillin". This meeting was well attended and a number of doctors from the new Wilson Army Hospital at Staunton were present. At the business session, five doctors were admitted to membership. Dr. D. C. Wilson of the University is president and Dr. M. K. Humphries, Jr., Charlottesville, secretary.

Tazewell County Medical Society.

At its May meeting, this Society elected its delegate and alternate to the meeting of the Medical Society of Virginia, October 25-27. Dr. W. E. Baker of the Venereal Disease Control Bureau of the State Health Department was the speaker of the evening, the subject of his talk being "The Diagnosis and Treatment of Gonorrhea".

The president and secretary of this Society are Dr. M. B. Crockett and Dr. Mary E. Johnston, respectively, both of Tazewell.

Joint Meeting.

The Clinch Valley and Wise County Medical Societies met in Norton on May 30th, under the joint presidency of Dr. C. H. Henderson and Dr. J. J. Porter, both of Norton, representing these societies, respectively. The scientific program, which followed dinner, was held with the cooperation of the Department of Clinical and Medical Education and the Committee on Industrial Health of the State Society, and included discussions on "Toxicity on Military Explosives and Comments on Preventive Hygienic Work" by Dr. J. E. Williams, medical director of Holston Ordnance Works at Kingsport, Tenn., and "Leukorrhea" with slide explanations by Dr. William Bickers of Richmond.

Montgomery County Medical Society.

At the meeting of this Society held at Radford on May 10th, Dr. A. M. Showalter, of Christiansburg, president, presided, and there was an attendance of twenty-three. A committee to cooperate with the Regional Cancer Foundation was appointed with Dr. John J. Gieson as chairman and Drs. S. H. Nixon and F. B. Huffman other members. The question of a clinic for planned parenthood to be held by the Health Department of Montgomery County was discussed at length and approved by the Society. Dr. Showalter was re-elected president and Dr. J. L. Early, vice-president. Dr. R. H. Grubbs was elected secretary-treasurer. New members taken in at this meeting are Drs. L. E. Delap and L. M. Davis.

Dr. J. M. Bishop, Roanoke, presented a very interesting paper on the thymus gland in children, illustrated with x-ray pictures, and Mr. M. Haskins Coleman, Richmond, Director of the Hospital Service Association, spoke on "Emergency Medical Service", explaining in detail the type of service this organization renders.

The Roanoke Academy of Medicine

Held its regular meeting on May 3rd. The following scientific program was presented: Coarction of Aorta: Report of Two Cases by Dr. David S. Garner and Capt. George W. McCall, MC.; Acrodynia by Dr. Fred F. Davis; Treatment of Burns by Dr. J. M. Bishop; A Rare and Interesting Tumor

in an Elderly Man: Report of a Case by Dr. B. P. Seward; and Executive Director's Report of Local Blue Cross Hospital Service Plan by Mr. Leonard Key.

Dr. Paul Davis is President of the Academy and Dr. Ruth Barnhart, Secretary.

Lynchburg Academy of Medicine.

At the regular meeting of the Academy on May 3rd, Dr. J. M. Emmett, President of the Medical Society of Virginia, and Dr. J. R. Beckwith, his medical associate at the C. & O. Hospital in Clifton Forge, were guests, and presented a very interesting discussion of the diagnosis and newer methods of treatment of post-operative thrombophlebitis. They were particularly enthusiastic about their newer methods of ligation of the femoral veins and felt there is a definite opportunity to reduce considerably the incidence of fatal embolism when the thrombophlebitis can be diagnosed. Both papers were enthusiastically discussed by Dr. J. E. Haynsworth and other members of the Academy. Prior to the meeting, members of the Academy entertained the guests at dinner at The Columns.

Dr. S. H. Rosenthal and Dr. L. R. O'Brian, Jr., are president and secretary, respectively, of this organization.

News

Make Your Reservations for the State Meeting.

Now is the time to begin thinking and planning for the meeting of the Medical Society of Virginia in Roanoke, October 25-27. Headquarters will be Hotel Roanoke which is an ideal convention hotel. Rates are given for this, the Patrick Henry and the Ponce De Leon, both of which are in the heart of the business district but in easy walking distance to the meetings.

HOTEL ROANOKE
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Single—$2.50 to $3.00
Double (double bed)—$4.00.
Double (twin beds)—$5.00 and $6.00.

Dr. John O. Boyd is general chairman for the meeting. Names of those assisting him were published in the April MONTHLY.

Virginia Society of Ophthalmology and Oto-Laryngology.

The twenty-fourth annual meeting of this Society was held at the Virginian Hotel in Lynchburg on May 15th, under the presidency of Dr. Guy Fisher, Staunton. The guest speakers were Drs. Alan C. Woods and W. Raymond McKenzie both of Baltimore. Members of the Society appearing on the program were Drs. E. G. Gill and J. H. Gressette, Roanoke; Dr. E. T. Gatewood, Richmond; Dr. H. G. Preston, Harrisonburg; Dr. P. N. Pastore, Richmond; Dr. Charles T. St. Clair, Bluefield, W. Va.; and Dr. F. H. McGovern, Danville.

The newly elected officers are Dr. E. T. Gatewood, Richmond, President; Dr. James R. Gorman, Lynchburg, President-Elect; and Dr. Meade Edmunds, Petersburg, Secretary-Treasurer (re-elected).

Lynchburg was again selected for the meeting next year.

Married.

Dr. John Sargent Morris, Jr., Lynchburg, and Miss Elizabeth Cobey, Albany, Ga., April 28th. Dr. Morris is a graduate of the Medical College of Virginia, class of 1943, and is serving his internship at the College Hospitals.

Dr. John David Powell, Stuart, and Miss Mable Kathryn Minter, Martinsville, April 24th. Dr. Powell graduated from the Medical College of Virginia this year and is serving an internship at the Norfolk General Hospital, Norfolk.

Dr. Luther Bradford Waters, Jr., Norfolk, and Miss Margaret Mae Hughes, Colerain, N. C., May 17th. Dr. Waters is a graduate of the Medical College of Virginia in 1941.

New York Polyclinic Medical School and Hospital.

At the regular meeting of the Clinical Society of this School, held on May 3rd, the following program was presented: The Sulfonamides by Dr. James P. Croce; Blood Pressure and the Total Individual by Dr. John Carroll; The Treatment of Paroxysmal Tachycardia and Auricular Fibrillation by Dr. Harold E. B. Pardee; The Management of Lung Abscess by Dr. George G. Ornstein; Apocrine Breast Cancer (Colored Motion Picture) by Dr. Herbert C. Chase; Evaluation of Excretion Urography as Compared with Instrumental Urography by Dr. Joseph F. McCarthy; Gastroduodenal Ulcer: Its Surgical Approach by Dr. Robert E. Brennan; The Hypertonic Infant by Dr. Sidney V. Haas; Premature Babies by Dr. W. Morgan Hartshorn; Endometrial Implant Occurring in Abdominal Scar Following Cesarean Section by Dr. Edward H. Dennen; The Treatment of Empyema as a Postoperative Complication by Dr. Henry I. Goodman; Three Simple Tests for Bedside and Office Diagnosis of Liver Diseases by Dr. Samuel Weiss; and The Status of Gastroenterology in Medicine by Dr. G. Randolph Manning.

Social Forces Compel Professional Planning for Medical Economy.

Mr. Francis I. Libby, Manager of the Piedmont Hospital Service Association in Lynchburg, has called attention to an omission in the manuscript of his article on the above subject, which appeared in the May MONTHLY, pages 257-260. On page 259, Section (5), the last sentence of last paragraph of part (*c*) should read: ". . . and, obviously, compulsory hospital insurance is too closely allied with compulsory medical care to be far removed from it in legislative proposals." He hopes this will clear up this perplexing statement.

Dr. J. L. Kinzie,

Who has served in the Army Medical Corps since last August, has been retired from active duty because of physical disability and has resumed his private practice in Salem.

News from the Medical College of Virginia.

Dr. J. P. Gray, dean of the school of medicine; Dr. John P. Lynch, Jr., associate in medicine; Dr. Harry Walker, associate professor of medicine; and Dr. Douglas Chapman, associate in medicine, attended the regional meeting of the American College of Physicians in Washington recently.

Dr. Donald S. Daniel, assistant professor of surgery, recently spoke to the surgical section of the Medical Society of the State of North Carolina at its Durham meeting. During the State society meetings an alumni chapter of the college was organized, with Dr. B. C. Willis of Rocky Mount as president. Dean J. P. Gray, Dr. O. B. Darden, associate professor of neuropsychiatry; Dr. Charles Outland, assistant professor of preventive and public health medicine and president of the general alumni association; and Dr. Daniel attended the alumni meeting.

Dr. E. I. Evans, assistant professor of surgery, attended the War-Time Graduate meeting, sponsored by the American College of Physicians, American College of Surgeons, and the American Medical Association, held in Atlanta, giving a talk on the treatment of burns and shock.

Dr. C. C. Coleman, professor of neurological surgery, attended the meeting of the American Neurological Association in New York, giving a paper on the "Treatment of Peripheral Nerve Injuries". He also gave the oration on surgery at the annual meeting of the West Virginia State Medical Society in Charleston on May 18, his subject being "Neurosurgical Procedures for the Relief of Pain".

Dr. W. T. Sanger, president, and Dr. J. P. Gray, dean, attended the annual meeting of the West Virginia State Medical Society and the alumni luncheon held in connection with the meeting on May 18.

Dr. P. N. Pastore, professor of otology, laryngology, and rhinology; Dr. E. T. Gatewood, associate professor of otology, laryngology, and rhinology; and Dr. E. U. Wallerstein, associate professor of otology, laryngology, and rhinology, participated in the twenty-fourth annual meeting of the Virginia Society of Ophthalmology and Otolaryngology at Lynchburg on May 15. Dr. Pastore spoke on "Osteomyelitis of the Petrous-Temporal; a Case Report", and Dr. Gatewood on the "Mechanism of Esophageal Voice following Laryngectomy". Dr. Wallerstein participated in discussions of papers.

Dr. Antonio De Vasconcellos Marques of Lisbon recently spent a week in Richmond as the guest of Dr. C. C. Coleman, visiting the neuro-surgery clinics. Dr. Marques is visiting the neuro-surgery clinics throughout the United States.

Dr. W. T. Sanger, president, attended a nutrition meeting in Newport News, speaking on the subject of nutrition, recently. He is chairman of the State Nutrition Committee.

Dr. Harvey B. Haag, professor of pharmacology, and Dr. Lee E. Sutton, Jr., professor of pediatrics, addressed the Cabell County Medical Society in Huntington, West Virginia, on May 13, Dr. Haag speaking on the "Pharmacology of Sulfonamides" and Dr. Sutton on the "Use of Sulfonamides in Pediatrics".

News from the University of Virginia, Department of Medicine.

The University of Virginia chapter of Alpha Omega Alpha held a meeting on April 26th for the purpose of the initiation of seven new members. Dr. Allen O. Whipple of the Department of Surgery of Columbia University, New York City, spoke on the "Principles and Treatment of Burns".

Dr. Harrison F. Flippin of Philadelphia spoke on "Clinical Observations on Sulfamerizine and Penicillin" at the meeting of the University of Virginia Medical Society held on May 6th.

Several members of the staff of the Schools of Preventive Medicine and Bacteriology and of Clinical Pathology of the University of Virginia Medical Department attended the meetings of the Bacteriology Section of the Virginia Academy of Science in Richmond on May 11th. Dr. Francis Smith collaborated with Dr. J. D. Reid of the Medical College of Virginia in presenting a paper on "Tropical Mycology". Dr. Thomas S. Englar presented a paper entitled "War Time Problems of a Local Health Department". At the afternoon session Dr. George McL. Lawson spoke on whooping cough diagnosis and prevention. Dr. Ralph B. Houlihan, Secretary of the Bacteriology Section of the Academy, secured for the program eight papers dealing with military and civilian problems of communicable disease control and preventive medicine.

Dr. C. W. Lynn

Resigned his position as one of the city physicians of Petersburg, effective May 1, and will devote his time to private practice.

Free Supplement to U.S.P., XII.

Notice is hereby given to owners of all copies of the U.S.P. XII to fill in and mail the post card order which is tipped inside the back cover of the U.S.P. XII, and which entitles the holder to a copy of the First U.S.P. XII Bound Supplement soon to be issued. It was not expected that this Supplement would be issued until about two and one-half years after the appearance of the U.S.P. XII, but changing conditions and wartime demands have necessitated its immediate publication. The Supplement itself will carry a similar order form for a Second Bound Supplement, should the latter be required before the appearance of the U.S.P. XIII.

It is expected that the First U.S.P. XII Bound Supplement will be available within two months and when it becomes available immediate shipment will be made without further cost to those who mail in their order cards as directed.

Personnel Changes in State Department of Health.

Dr. E. W. Longest is now Acting Health Officer of Norfolk-Princess Anne Counties.

Effective June 1, Dr. James A. Dolce, former Health Officer of Fairfax County, will be assigned as Health Officer of Prince William and Stafford Counties with headquarters at Manassas.

Dr. S. D. Sturkie, former Health Officer at Marion, has been appointed Health Officer of Lynchburg. The vacancy at Marion has not yet been filled.

Pediatric Antiques on Tour.

The Mead Johnson Collection of Pediatric Antiques bears eloquent witness to the great strides made in the feeding part of pediatrics. This exhibit depicts the progression of infants' feeding vessels from the Greece of twenty-five centuries ago down to time within our own memory. The collection has been steadily growing in size and scope and is of increasing interest for teaching purposes via the historical route. The destruction of original sources caused by the war tends to add to the value of these objects. Hence it is that, by request, the Collection now goes on an annual pilgrimage to colleges, hospitals, museums, libraries and other institutions of learning. Arrangements may be made for "stop-overs" upon application to the curator, Mead Johnson and Company, Evansville, Ind.

International College of Surgeons.

The fourth international assembly of the College will be held at the Waldorf Astoria Hotel in New York City on June 14-16. Subjects for discussion will deal with "Rehabilitation" and "War Surgery". Papers will be read by eminent authorities and continuous round-table discussions have been scheduled.

The medical profession is cordially invited to attend.

Physicians Needed for Health Work.

The Merit System Council of West Virginia announces unassembled examinations for positions in the West Virginia State Health Department and the West Virginia State Department of Public Assistance. Applications will be accepted continuously, but new registers will be established from applicants who file no later than June 26, 1943.

Positions for which applications are being accepted, and their respective salary ranges, are listed below. Appointments may be made at above the minimum salaries.

Director of Maternal & Child Hygiene	$4200-$4800
Assistant Director, Maternal & Child Hygiene	3840- 4500
Director, Industrial Hygiene	4200- 4800
Director, Vital Statistics	4200- 4800
Director, Communicable Diseases	4200- 4800
Assistant Director of Communicable Diseases (Tuberculosis)	3840- 4500
Assistant Director of Communicable Diseases (Venereal Diseases)	3840- 4500
Venereal Disease Consultant	3840- 4500
Director, Bureau of Dental Hygiene	3840- 4500
Director of County Health Work	4200- 4800
Senior Health Officer	3840- 4500
Junior Health Officer	3360- 3840
Health Officer Trainee	2400
Assistant Director, Hygienic Laboratory	2640- 3240
Senior Bacteriologist	1800- 2400
Senior Serologist	1800- 2400
Consultant Nurse in Special Fields	2400- 3000
Public Health Nursing Supervisor (State)	1920- 2400
Public Health Nursing Supervisor (Local)	1800- 2040
Chief of Medical Services	4800- 5280

Residence in West Virginia has been waived in consideration of applicants for these positions, which offer tenure of office and definite promotional possibilities.

Physician

Desires a position or location where remuneration is weekly or monthly. Address "Physician", care this journal, 1200 East Clay Street, Richmond. (*Adv.*)

Obituaries

Dr. William Meade Burwell,

Prominent physician of Chincoteague, died April 2nd at the Marine Hospital in Baltimore, following an illness of six months, with myocarditis. He was a native of Floyd County and seventy-seven years of age. Dr. Burwell graduated from the Medical College of Virginia in 1895 and had practiced at Chincoteague for more than forty years. For a number of years he was acting assistant surgeon of the U. S. P. H. S. there. Dr. Burwell was active in the civic affairs of the Island, having served as a member of the town council, the Accomack County School Board, and was president of the Bank of Chincoteague. He was a past president of the Accomack County Medical Society and had been a member of the Medical Society of Virginia since 1897. He was also a Mason and a member of the Society of Cincinnati. His wife survives him.

Dr. William Mercer Sprigg,

Well known physician of Washington, D. C., but a native of Petersburg, died March 6, after a brief illness. He graduated in medicine from Columbian, now George Washington University, Washington, in 1885, and for some time was a member of the obstetrical department of its staff. He took a deep interest in the professional life of Washington, where he practiced for fifty-five years. He was also affiliated with several medical organizations, including the Medical Society of Virginia in which he had held membership for thirty years. His wife and a daughter survive him.

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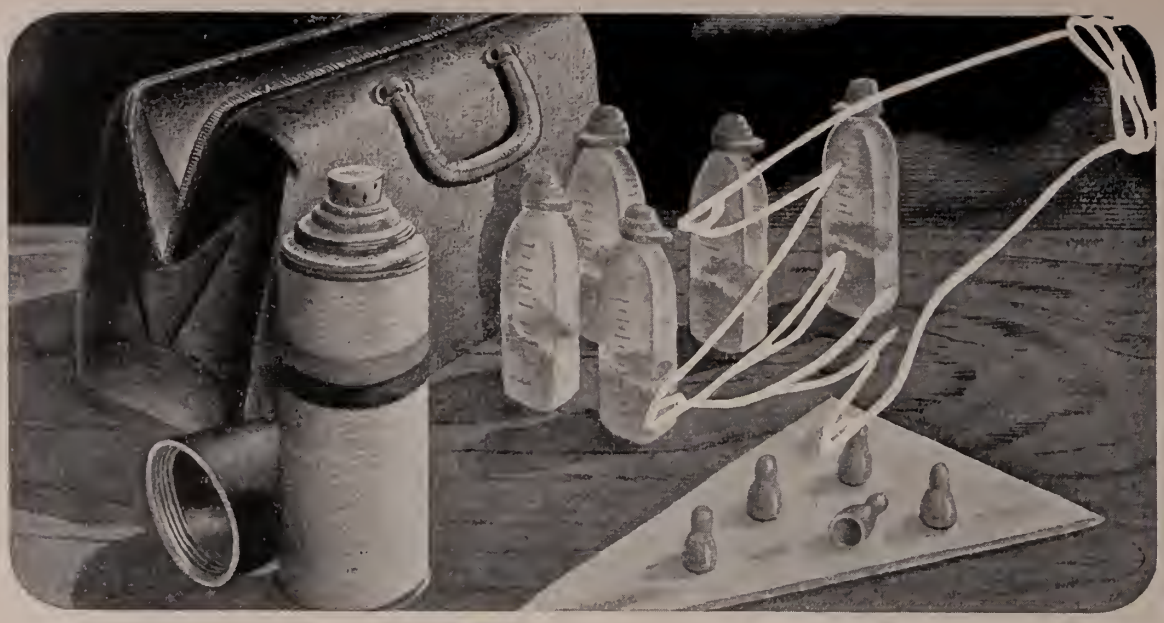

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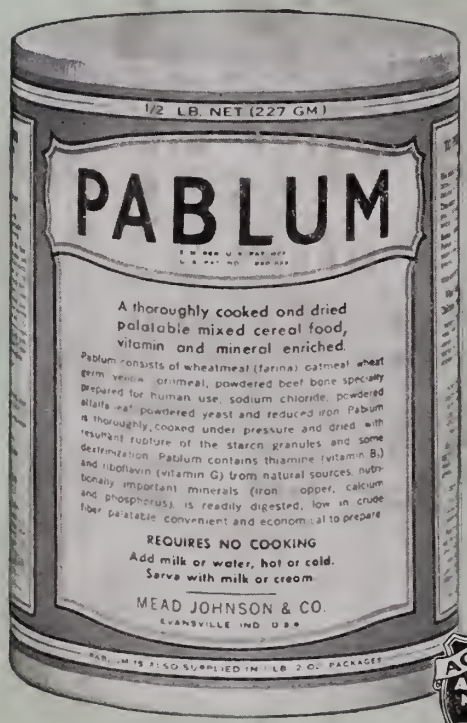

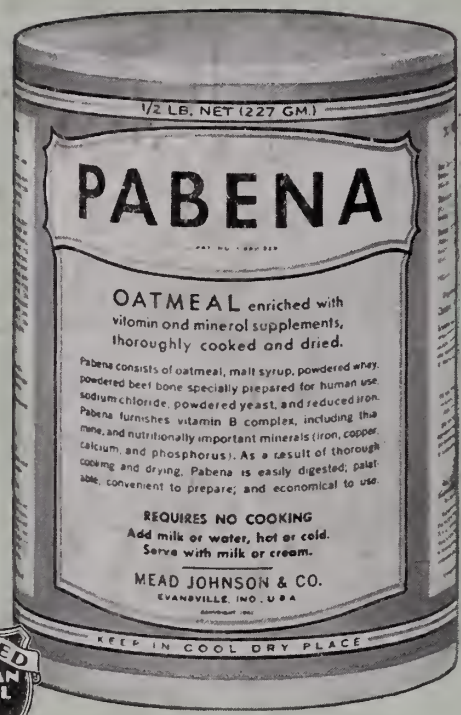

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July, 1943

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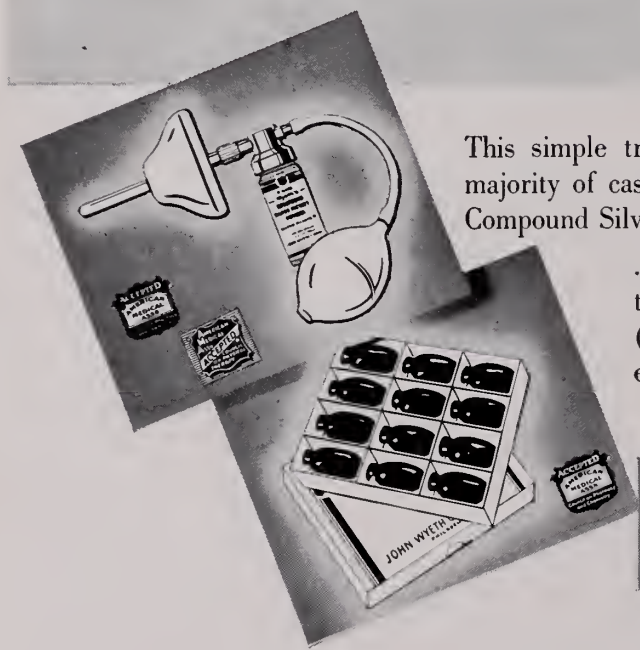

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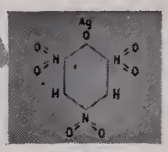

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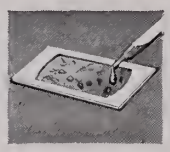

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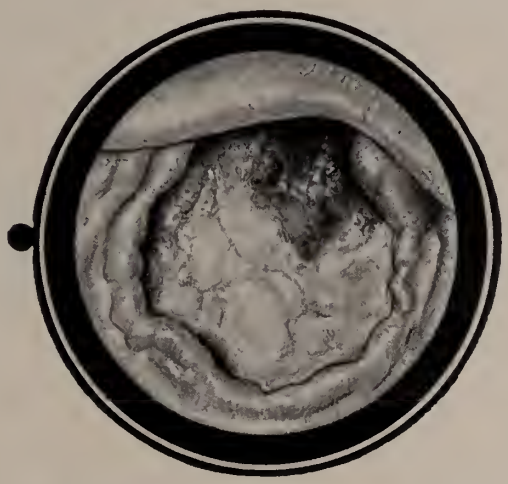
*"WAR HAS REVEALED THE UNSUSPECTED COMMONNESS OF PEPTIC ULCER"**



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*Brockbank, William: The Dyspeptic Soldier. Lancet, Jan. 10, 1942.

**Chamberlin, D. T.: Peptic Ulcer and Irritable Colon in the Army. Jour. Digest. Dis., Aug., 1942.

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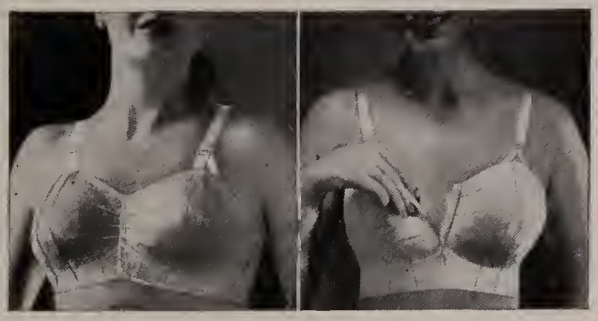

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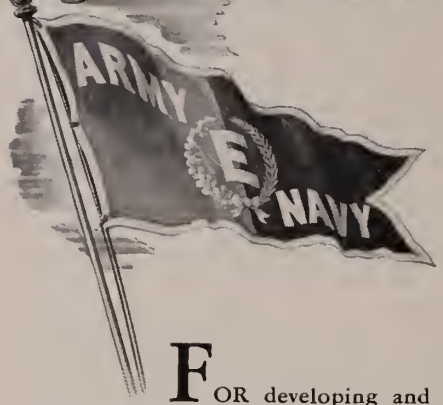

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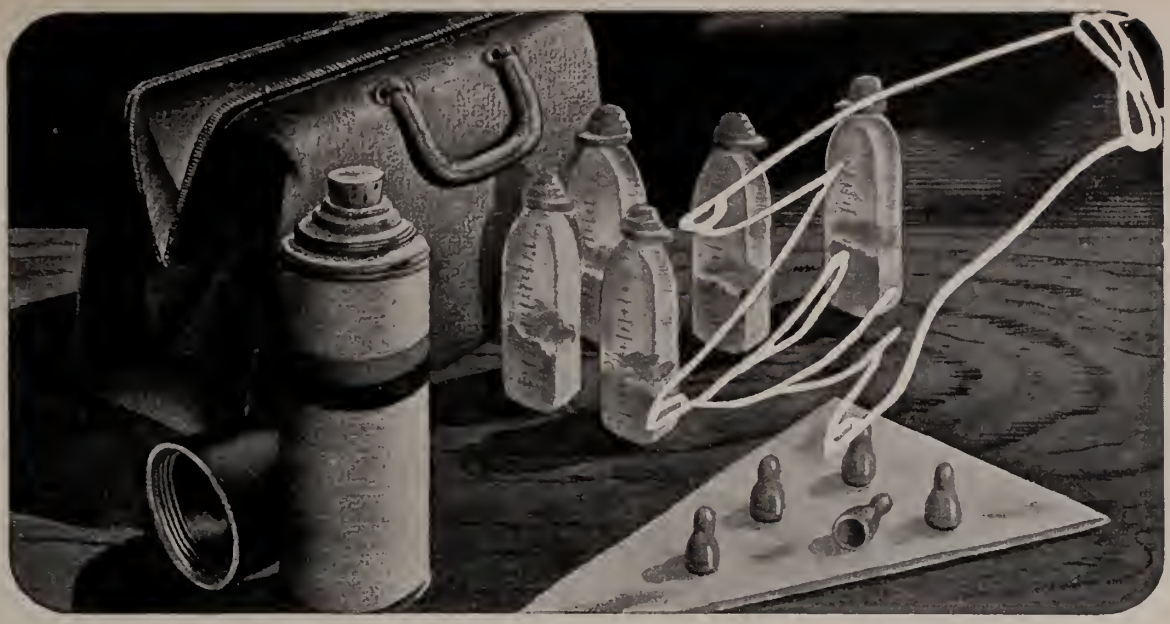

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WHOLE No. 1093.

RICHMOND, VA., JULY, 1943.

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THREE GALL BLADDERS*

W. Lowndes Peple, M.D.,
McGuire Clinic, St. Luke's Hospital,
Richmond, Virginia.

Were the title of this paper, "Three Feathers" or "Four Roses", I feel sure that my audience would be filled with a keener anticipation and interest than can possibly be elicited by such a caption as "Three Gall Bladders". None the less, that is my title and I shall stick to it.

Had I only in mind the reporting of three striking cases of gall bladder disease I would have used a title such as this, "Report of Three Unusual Cases of Gall Bladder Disease". But that is not what I am trying to do at all. The purpose of this paper is to show in logical sequence the steps or stages that take place when gall stones are passed and a spontaneous cure is effected.

Some of you who were not yet hatched in that era when the gall bladder was a touch-me-not in surgery may not be aware of the many treatments and methods designed to assist nature and to aid the sufferer from gall stones in throwing off the offending calculi. It was devoutly believed that this could be done, and all one had to do to accomplish it was to grease or lubricate the gall bladder, the cystic and common ducts, and let the stones pass and then drop into the duodenum, and on to the end of the line. Olive oil was the lubricant of choice in most of the methods employed.

I recall an article in one of our medical journals about this time, in which the author described the entire treatment in minutest detail. First, one starved a bit and got the gastro-intestinal tract reasonably empty with saline laxatives. Then, he drank a pint of olive oil in the erect or standing position. Next he lay upon a sofa on his right side, so as to pour the oil into the duodenum and common duct. After some twenty minutes in this position it was necessary to prop the body up, standing on one's head, or rather the shoulders. Twenty minutes to an hour of this, and the oil would flow from the common duct into and through the cystic duct, and on into the gall bladder, distending that organ and greasing the contained stones thoroughly. Later on, a dose of saline was given to rid the bowel of the stones which had gradually been emptied into the duodenum.

It is an established fact that many small gall stones have passed through the ducts and been recovered in the stools of patients without the aid of either oil or gymnastics. The quacks, realizing this, and seizing on the olive oil treatment, went one better, and guaranteed the passage of stones. To make good this prophecy, they gave the oil without the gymnastics and without calling it oil, and very cleverly they made the purgative strongly alkaline, so that the guarantee was always fulfilled. The subject would pass innumerable green balls, a little larger than green peas, which were for most laymen perfectly satisfactory gall stones. The fact that they were soap balls made by the oil and an alkali troubled the quacks not at all.

The gymnastics were perfectly logical if one forgets the ampulla of Vater and the muscular structure of the gall bladder and its ducts, as well as the nervous mechanism that is in control. The only illogical point to my mind is that, were one enough of an acrobat or tumbler to assume all of these attitudes and postures, and to hold them, he would not need any kind of treatment, for these people don't have gall stones at all. It is the fat woman in the

*Read before the Richmond Academy of Medicine, Richmond, January 26, 1943.

side show who would be the victim, not the beautiful lady on the white horse or the man on the flying trapeze—they just don't have them!

We then may all agree that it is possible for little gall stones without, and possibly with, the aid of gymnastics and lubricants, or both, to pass through the ducts and into and out of the bowel. But what about the big ones, one and two inches in diameter? Do the little muscular ducts dilate and let these large masses go through? There is one, I might say, ample precedent in the female economy. The cervical canal is a mighty narrow channel that dilates to let mighty big things get through, but that is really another story.

Case 1.—A broad belt of adhesions is shown between the distended gall bladder and duodenum.

In the course of 15 years I have acquired three cases of gall stones that show the way in which all large stones, and may be many small ones, accomplish what might be called an exit by the "Southwest Passage", and it is about these that my paper is built.

Case 1. Mrs. R. B. A., age 42, married, mother of several children. Her story was of gaseous indigestion and dyspepsia with pain and soreness over the upper abdomen. These symptoms had troubled her only for the preceding six months. There was no story of acute inflammatory attacks severe enough to put her to bed and there had never been any jaundice.

Before being referred to me for operation she had been thoroughly studied with the following findings: She had a pathological gall bladder containing two rather large stones, but the gastrointestinal x-ray study revealed what appeared to be a duodenal ulcer also. A portion of the duodenum was fixed and could not be pulled down with the gloved hand. There was no filling defect but this area would not move.

As a tribute to the cleverness of these x-ray people, of whom we demand so much, I will give Dr. Tabb's conclusions. To most of us this will prove a tribute to his diagnostic skill, to the other more obstinate few, it will at least enhance his reputation as a prophet. His closing statement was as follows: "There is no evidence of an organic lesion of the stomach. The patient has a slight and practically constant deformity of the base of the duodenal bulb which is probably an ulcer. This is associated with considerable spasticity and irritability and some pylorospasm. Patient has at least one large gall stone and it would be possible for a pathological gall bladder to cause the above findings and to simulate a duodenal ulcer."

The Operation. An upper right rectus incision showed a gall bladder thickened and tightly packed with stones. It was firmly adherent on its lower half to the duodenum by a very broad adhesion. There was no other evidence of an ulcer. The appendix was of the obliterative type. The adhesion between the gall bladder and the duodenum was severed, thus mobilizing the duodenum. The gall bladder and the appendix were then removed. This patient made a quick smooth recovery and has remained well.

Case 2. Miss Mary C., a maiden lady of some 62 drab and dreary winters, was small and thin, her features pointed and narrow, her thinning grey hair knotted tightly at the back of her head. She was a "wind swept woman". She lived in the country and raised chickens in the intervals allowed her by a most recalcitrant gall bladder.

For the preceding twenty-five years, a quarter of a century, she gave the clear matter of fact recital of

attack after attack, many of these putting her to bed and accompanied by fever, pain, and extreme tenderness over the upper abdomen. She took olive oil, and at first had almost two whole years of peace; but, then the attacks returned and dogged her very existence up to the time we met her.

Just four months prior to her admission to St. Luke's Hospital she developed jaundice which steadily deepened. She now had all the miserable symptoms produced by diverted bile—nausea, vomiting, loss of appetite, physical weakness, and loss of weight. She had but little fever, very little pain, and but slight tenderness. She was a deep yellowish green color and her sclerae were deeply injected. Though 5 ft. 5 in. tall, she weighed but 100 lb. and presented the picture of rather marked emaciation. The liver was enlarged and extended several inches below the ribs.

Case 2.—The gall bladder has been opened at its fundus, a scalpel is passed from the interior of the gall bladder through the area of adhesions and into the lumen of the duodenum.

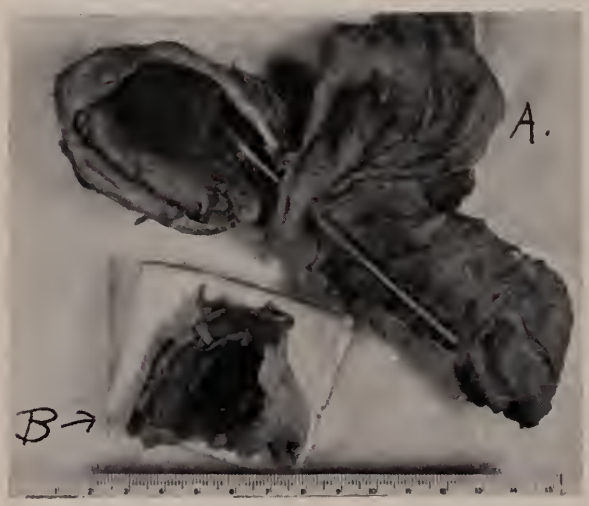
A flat plate showed no stones but a shadow which resembled the gall bladder. Dr. Tabb stated, "The visualizing of a gall bladder on a flat plate is indication of a pathological gall bladder."

The clinical picture presented with the slow onset of jaundice following gall stone attacks over a period of twenty-five years would certainly suggest malignancy. In spite of the fact that she had moderate fever and moderate leucocytosis with a high polynuclear count, it was thought that she probably had cancer either of the liver or bile ducts. However, it was unusual for a cancer large enough to produce jaundice not to be palpable in so thin a woman after five months. As the condition was growing steadily worse, an exploratory operation was decided on with a view to diverting the bile back into the intestinal tract and at least relieving her of her jaundice.

Under light general anesthesia, a right upper rectus incision was made, revealing a small contracted gall bladder buried in adhesions with only its dome showing. Many adhesions were separated until the common duct could be palpated. This was as large as one's index finger and of firm consistency like a mass of inflammatory tissue. It did not have the feel of a string of beads as though stones were lying in the lumen. The head of the pancreas was large and somewhat hard. There was a stone about one-eighth inch in diameter which was tightly imbedded in the gall bladder in its upper third, and opposite to this point was an area of dense adhesions to the duodenum about three-quarters inch in length and one-half to three-quarters inch in breadth. Evidently nature was trying to effect an artificial opening into the duodenum at this point. The gall bladder in the beginning was noted as being too small to fit the half of a Murphy button and too much thickened to lend itself to proper suturing. The fundus of the gall bladder was opened with a knife and the gall stone removed with forceps. The knife was then inserted through the wound into the gall bladder; and, as the assistant spread out the duodenum, a stab wound was made from the inside of the gall bladder through the area of adhesions into the duodenum. A curved forcep was then passed into the duodenum and the fistula widened. The fundus of the gall bladder was then sewed up and covered over with omentum. In this way I completed a cholecystenterostomy which nature was endeavoring to perform. There was little bile in the gall bladder but I demonstrated its patency down to the common duct.

The abdominal wound was closed without drainage, and the patient made a rapid and uneventful recovery. The time of operation, twenty minutes, was so short and the trauma so slight that she had little or no post-operative discomfort. The nausea stopped at once and bile appeared in the stools in a few days. When she left the hospital her jaundice had almost disappeared and she was rapidly gaining in weight and strength.

I am inclined to think the case is one of intractable jaundice due to stones in the common duct, as no evidence of a cancerous growth could be found at operation. Should symptoms arise from an infected common duct or should the pain return, one could go in again and remove the stones or even the common duct itself with impunity.



Case 3.—A. The gall bladder and duodenum are open, showing a large stone remaining in the gall bladder with a probe passing through the fistula between the gall bladder and bowel. B. Small segment of the ileum with stone fastened in its lumen at point of obstruction.

I report this case somewhat in detail, not only because the operation was new to me but because of its simplicity in relieving this feeble, jaundiced old woman of a well nigh fatal illness. Should anyone setting out to do an anastomosis of the gall bladder to the bowel encounter so fortuitous a patch of adhesions, I would remind him of the happy outcome of this case lest he impetuously separate them without recognizing their infinite value.

That our diagnosis of a benign condition was correct in this case seems amply proven, for we kept track of her for several years. In this time she gained in weight and strength and had no recurrence of her symptoms. Thus she was enabled to continue without let or hindrance the rearing of chickens from chickhood to maturity.

Case 3. Mrs. C. B. W. I was called in to see this case with Dr. Thomas F. Gill. The lady was 78 years of age and was quite feeble. She had had two attacks of coronary thrombosis, the last being several months before. She had been seen by Dr. James H. Smith with Dr. Gill prior to this time, for what appeared to be subacute inflammation of the gall bladder.

Her temperature was normal; pulse very poor but not over 70. The abdomen was more or less distended, but there was no rigidity. She was suffering from paroxysmal abdominal pains. Her bowels had moved that morning and on the day before. She was vomiting a good deal of bile in small quantities. She described the pains as being very much like labor pains. She was tender all over the abdomen, more marked in the left lower quadrant than elsewhere.

She had a small umbilical hernia and once had inguinal hernia on the right side, for which she wore a truss. There was no protrusion at this time in either locality.

I advised against operation and felt that the patient was an extremely bad risk if an operation should have to be done.

We agreed to leave off everything by mouth except water, and to give her enough Pantopon to keep her quiet. I did not think the gall bladder was involved at that time.

It was my opinion that we were dealing with a partial obstruction of the large bowel most probably due to a new growth. Since she grew no better she was removed to St. Luke's on August 30, 1942. She was bitterly opposed to an operation of any kind, stating that she was too feeble to stand it. I felt that her judgment in this was sound and did not urge it. Glucose by vein and other supportive measures failed to give her any relief and on September 3rd, four days after admission, she died.

AUTOPSY

"Autopsy performed on this elderly white female about one hour after death was limited to examination of the abdomen. The body was that of a well developed elderly female. No particular markings of interest were to be seen.

"Upon entering the abdomen the intestines were seen to be distended and in following these through there was noted to be about 15 inches about the ileocecal valve an obstruction in the ileum. At this point the bowel was somewhat red, congested and there was felt within the lumen a firm rounded object. Upon opening the ileum at this point there was found to be filling the lumen a barrel shaped smooth rounded gall stone faceted at either end. This measured about 2¼ cm. in diameter and completely filled the lumen at this point.

"There were adhesions about the gall bladder which was greatly thickened and upon being opened showed a dense white wall quite thickened. Within the lumen of the gall bladder together with a small amount of thin bile there was another stone almost identical to that found in the intestine. The duodenum was opened and a probe passed from the gall bladder readily entered the duodenum through an opening which appeared to be 1 to 1½ cm. in diameter. No further stones were noted.

"The liver, spleen, kidneys were examined grossly without the finding of any further abnormality.

"The gall bladder and duodenum showing the fistula were saved intact as a specimen, as was also a small segment of the ileum where the free stone became fixed."

In reviewing this case I feel that I should have had a flat plate made of the abdomen. One of the alternate diagnoses made, or rather suggested, in this case was obstruction from a gall stone. A flat plate would have readily clinched the diagnosis, and had I been less acquiescent and more insistent on an operation, one might have been done under local anesthesia. On the other hand, had she survived this trauma, would not the gall stone remaining in the gall bladder have repeated the same maneuver with the same result? It was just about as large as the first one whose removal would inevitably have left a scar and some narrowing of the lumen. What a problem they present, these hazardous operations upon old feeble people!

To summarize, I have tried with these three cases to demonstrate the steps and stages by which large gall stones manage to pass seemingly impassable barriers in their perilous voyage to the outer world. In *Case 1* we see the ground work completed in the firm adhesion of the wall of the gall bladder to the duodenum. In *Case 2* not only has this been done but the stone is actually beginning to bore its way through the completed septum. In *Case 3* the drilling through has been completed and one very large stone has passed through the opening and gained access to the bowel.

Floral Eponym (5)

THE well known Wistaria (or Wisteria which is the preferred spelling) is named for the equally well known anatomist, Dr. Caspar Wistar (1761-1818). This honor has been claimed by Charles J. Wister of Germantown. The late Dr. Howard A. Kelly in his delightful book, "Some American Medical Botanists", decides in favor of Dr. Wistar in spite of the preferred spelling. The Abbe Correa da Serra gave the name Wistaria to this beautiful climber in honor of his friend Dr. Wistar but Nuttall wrote Wisteria, although he stated that it was named after Dr. Caspar Wistar.

ADAMS-STOKES SYNDROME AS A COMPLICATION OF MYOCARDIAL INFARCTION—REPORT OF THREE CASES DEMONSTRATING TWO DIFFERENT UNDERLYING MECHANISMS*

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Adams-Stokes syndrome is usually associated with complete heart block. In this condition episodes of asytole occur and due to the decrease in cerebral blood flow, cerebral anoxemia results and a convulsion follows. Any condition that will produce recurrent episodes of cerebral anoxemia will produce the underlying mechanism of Adams-Stokes syndrome.

Myocardial infarction may be complicated by several conditions that will result in this mechanism. It is the purpose of this paper to report three cases of myocardial infarction during the course of which convulsions occurred. Electrocardiograms were obtained which demonstrate the probable mechanism responsible for the convulsion in each case. In one case an electrocardiogram was obtained during a convulsion.

Since the treatment depends on an understanding of the underlying physiological mechanism rather than a result of the mechanism, it is important to make a physiological diagnosis as to just what this mechanism is in each case.

Complete heart block was present in one case. Paroxysmal ventricular tachycardia occurred in the second case, and both conditions developed in the third case.

Complete heart block following coronary occlusion with myocardial infarction is not an infrequent occurrence. Rosenbaum and Levine found heart block of all types in 7 of 208 cases recently reported.[1] Of these cases, 5 had complete heart block at some time or other and 2 developed Adams-Stokes attacks.

When complete heart block is found to be present, effort should be made to increase the heart rate so that asystole will not occur. This may be accomplished by the administration of ephedrine sulphate, grains ⅜, every 3 or 4 hours. Adrenalin, minims three every hour, may be necessary at times. Barium chloride, grains ½ to grains 1 every 4 hours has been employed successfully also. Since the A.V. node is under partial control by the vagus and since in acute myocardial infarction vagal stimulation may be marked, atropine in full doses may be useful.[2] This will be discussed later.

The first case demonstrates complete heart block associated with convulsions.

Case I. J. S., white male, age 66, admitted 2/16/42.

Two days before admission, this patient developed sudden dyspnea followed shortly by a generalized convulsion. Several more convulsions occurred prior to admission. No history of previous cardiac disease could be elicited. On admission to hospital, he was cyanotic, orthopneic, and irrational. The retinal vessels were thinned and moderately sclerotic. The chest was clear to auscultation and percussion. The heart rate was 40 per minute. The rhythm was regular. A systolic murmur was present at the apex. The blood pressure was 170/65. The heart was enlarged to the left. No rub was heard. The abdomen was normal, and the extremities were negative. The Babinski was questionably positive bilaterally.

Laboratory studies showed hemoblobin to be 15.9 grams, R.B.C. 4.85 million, W.B.C. 12,300, with a moderate increase of the P.M.N. on the differential smear. The sedimentation rate was 5 mm. fall in 30 minutes, and 10 mm. fall in 60 minutes by the Cutler method. The urine was positive for sugar, and a few granular casts were present in the sediment. The sodium nitroprusside reaction was negative for acetone. The Kahn reaction was negative.

Chart I shows an electrocardiogram taken on the day of admission. Complete heart block is present with an auricular rate of approximately 115 and a ventricular rate of 46. The R-ST segments and T waves in leads II and III are typical of an infarction of the posterior basal portion of the left ventricle.

He was put in an oxygen tent and given ephedrine hydrochloride grains ⅜ every 4 hours. Fluids were limited and sedation given as necessary.

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*Read before the annual meeting of the Medical Society of Virginia, at Roanoke, October 5-7, 1942.

Chart II demonstrates an electrocardiogram taken on the day after admission. This shows a ventricular rate of 55. No further convulsions occurred.

Despite the fact that the ventricular rate had increased and the Adams-Stokes attacks had ceased, he went downhill progressively and died. The cause of death was apparently heart failure.

Arrhythmias occur frequently as a complication of myocardial infarction. These are of various types and one patient may show several types of arrhythmia at different times. Rosenbaum and Levine[1] report that 38 per cent of their series developed arrhythmia at some time. Ventricular tachycardia was present in 6 (3%). The mortality was 50 per cent in these cases.

Though ventricular tachycardia is not a common complication, it is an important one. Ventricular asystole may occur or ventricular fibrillation may develop. Either condition may be temporary and the patient recover or death may ensue. If the condition is temporary, transient cerebral anoxemia results and a convulsion occurs. Quinidine is the drug *par excellence* in the treatment of ventricular tachycardia. It increases the refractory period of the heart muscle and thereby decreases myocardial irritability.[3] It is this action that allows this drug to be of value in this condition. Quinidine is usually given by mouth without a test dose because the danger of the abnormal mechanism is greater than the danger of a toxic reaction. Three to five grains every 4 hours may be given until a normal rhythm is resumed. The dose is reduced, but should be continued for some time. Larger doses may be necessary. The ventricular rate will usually decrease and then normal sinus rhythm will be resumed.

The next case demonstrates paroxysmal ventricular tachycardia complicating myocardia infarction.

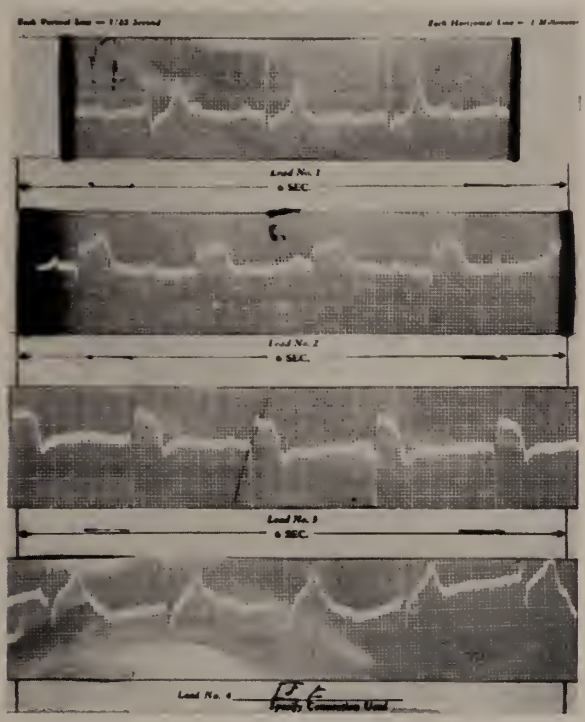

Chart 1.

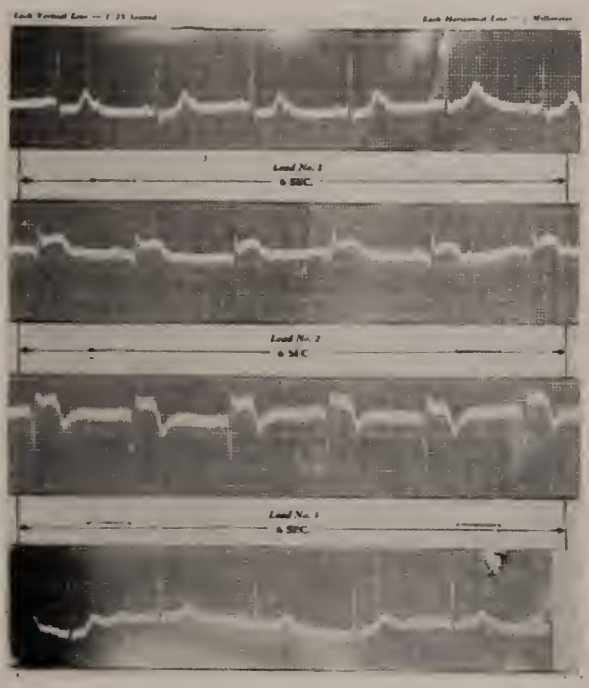

Chart II.

Case II. G. M., admitted to C. & O. Hospital October 4, 1942.

This patient was a 67 year old white male who had a history of definite angina for about 8 months. On the day of admission, severe substernal pain developed which radiated upward to the right side of the neck and to the right shoulder. This lasted about one hour; then improved, but 3 hours later, a similar pain developed which continued and was present on admission.

On physical examination, moderate cyanosis was present, and the skin was cold and clammy. The heart sounds were distant and a soft systolic mur-

mur was heard at the apex. The rate was 80 and the rhythm was regular. A few moist rales were heard in both lung bases. The blood pressure was 140/90 in both arms and 110 systolic in both legs.

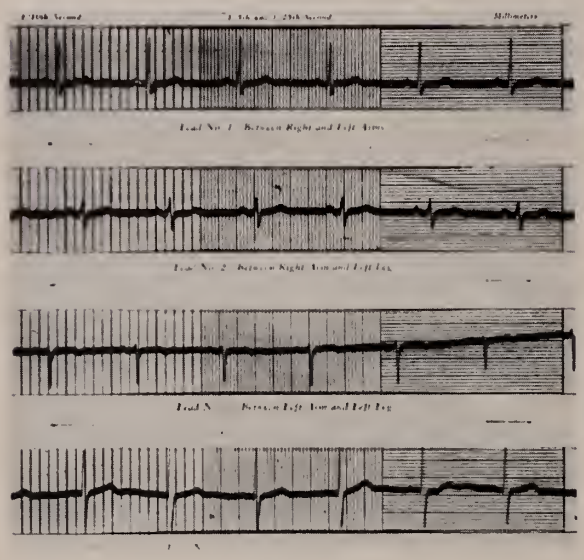

Chart III.

Laboratory studies showed the hemoglobin to be 15 grams, R.B.C. 4.73 million, W.B.C. 11,400, with an essentially normal differential smear. Sedimentation rate was 6 mm. fall in 30 minutes, and

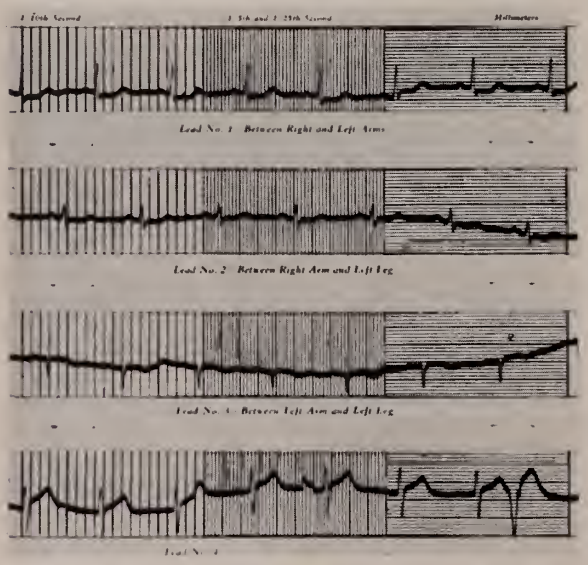

Chart IV.

13 mm. fall in one hour, using the Cutler method. The urine showed a specific gravity of 1022 and a two plus albumin, but no abnormalities of the centrifuged sediment. The blood urea nitrogen was 20.68 mg. per cent. A Kahn reaction was negative.

Chart III shows the electrocardiogram taken on September 25, 1942, nine days before admission,

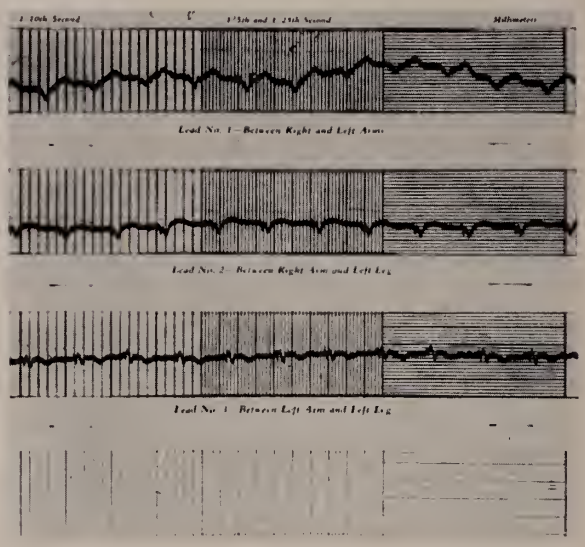

Chart V.

and chart IV shows the electrocardiogram taken when he was brought to the hospital. Definite depression of ST-I and a diphasic T-III had developed.

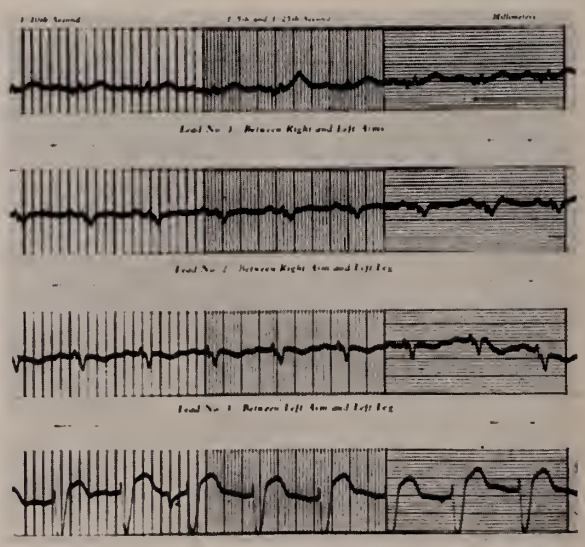

Chart VI.

He was put immediately to bed and given morphia as necessary for pain. Aminophyllin and a sedative were given regularly also. On the day fol-

lowing admission, his pulse rate became elevated to 110, and an electrocardiogram showed bundle branch block and nodal or ventricular tachycardia. We thought it was the latter (Chart V). Quinidine therapy was begun. About five hours afterward, he developed a convulsion which lasted about 10 seconds. Five such episodes occurred during the next four hours. At these times, asystole was usually present, but at times irregular heart sounds were heard. At 6:00 A. M. on October 7, 1941, the heart rate had decreased to 84 and was perfectly regular. An electrocardiogram taken showed a sinus rhythm with bundle branch block. (Chart VI). During the next two days, distention was troublesome and nausea was prominent. Dyspnea developed and he was put in an oxygen tent. The rhythm remained regular, but he gradually went downhill, developed Cheyne-Stokes respiration and died 5 days after admission. Postmortem examination was not performed.

It is our belief that this patient had an infarction of the posterior basal portion of the left ventricle with left bundle branch block. Paroxysmal ventricular tachycardia developed and subsequently episodes of ventricullar fibrillation occurred. The tachycardia cleared up as a result of quinidine, but he died of heart failure and not of the arrhythmia.

There has been recent emphasis on the development of afferent nervous impulses in an area of ischemia following coronary occlusion.[2] These reflexes are presumably carried through the sympathetic nerve tracts centripetally and efficient impulses are carried by the vagus. Marked vagal stimulation occurs with resulting coronary spasm. Ventricular fibrillation, ventricular tachycardia, and occasionally heart block may result.

It has been shown experimentally that surgical interruption of the afferent reflex arc will reduce the mortality of coronary ligation in dogs from 75 per cent to 10 per cent.[2] Since this is obviously impractical clinically, effort is made to interrupt the efferent limb of the reflex. This can be accomplished to a great extent by atrophine in adequate doses. The mortality in dogs after coronary ligation can be reduced from 75 per cent to 35 per cent. This can be further reduced to 30 per cent by administering aminophylline intravenously at the same time.[2] It appears important, therefore, that patients who are suspected of having developed myocardial infarction be given atropine and aminophylline intravenously until the danger is past. Just when this occurs is difficult to say. Leroy and Snider advise grains 1/75 of atropine and .48 gram of aminophylline intravenously at once. This may be repeated every four to six hours as the case suggests.

The following case illustrates an example of myocardial infarction, paroxysmal nodal tachycardia, ventricular tachycardia, complete heart block with ventricular asystole, and repeated convulsions.

Case III. Mrs. A. F. K., white female, age 48, admitted July 1, 1942.

This patient was said to be in good health and without symptoms of coronary disease until four days before admission to the hospital. At that time she developed substernal pain associated with dyspnea and sweating. This continued and she went home to bed. The pain improved on opiates after about twenty-four hours. However, twelve hours prior to admission, she began to have repeated convulsions. These were grand mal seizures and lasted 30 seconds to several minutes. She aroused between the episodes, was conscious, and seemed comfortable. Several convulsions occurred during that night and she was brought to the hospital the following A. M. A convulsion had just occurred as I walked in the room.

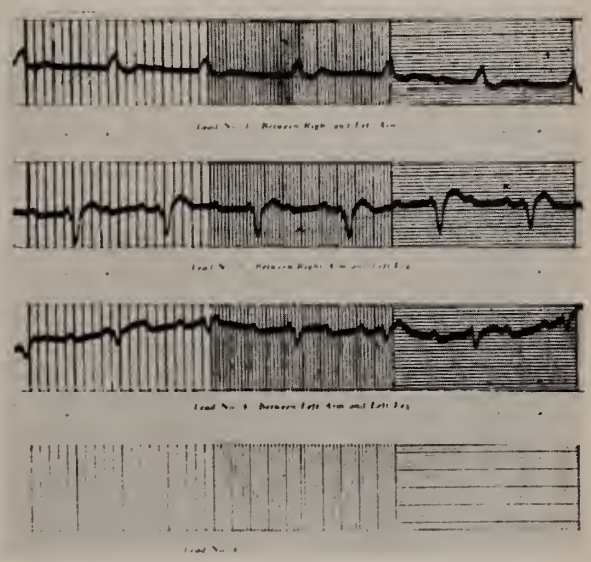

Chart VII.

The skin and mucous membranes were cyanotic. The face and extremities were cold. The neck veins were not distended. The pulse could not be felt nor

the heart beat detected with the stethoscope. The respirations were gasping and about 4 per minute. The peripheral veins were collapsed.

A needle was inserted in the femoral vein and 7½ grains of theamine (Lilly) and 7½ grains of caffeine sodio-benzoate were given in this vein. The respiration picked up to 16 per minute, and the heart beat was heard. An electrocardiogram, taken at this time (Chart VII), showed complete heart block. Left bundle branch block, discordant type, is also present. In a few minutes, the heart beat and respiration ceased again and theamine again was given intravenously. Again the respiration and heart beat commenced. The blood pressure became obtainable and was found to be 110/70.

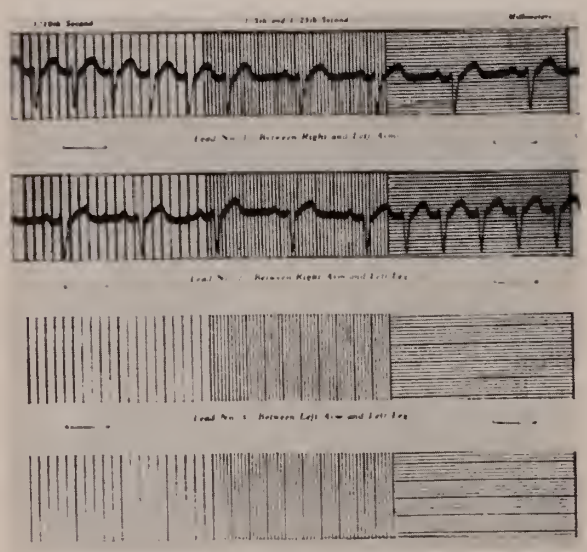

Chart VIII.

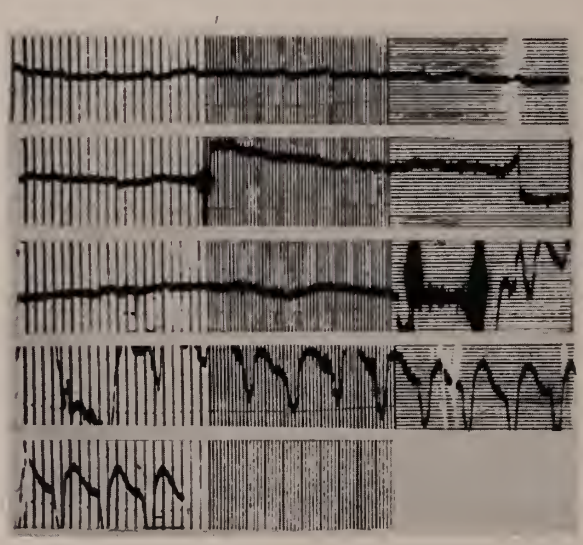

Chart IX.

General physical examination was then done while an oxygen tent was being rigged up. The chest was clear. The heart rate was approximately 80 per minute with sounds of good quality. The abdomen and extremities were negative. Patient in the meantime regained consciouness and began to talk. She complained of "gas" in the substernal region and dyspnea, but nothing else. Shortly thereafter the pulse rate became very rapid; then became normal again. Electrocardiograms were taken almost continuously. Chart VIII demonstrates such a tracing. It appears to be a nodal or a high ventricular tachycardia. Shortly after this occurred, another attack of unconsciousness and convulsions developed. An electrocardiogram taken during this demonstrates complete A.V. block with ventricular standstill (Chart IX). Complete heart block with ventricular asystole was present for approximately eighteen seconds.

She was given atropine, grains 1/100, every four hours; quinidine, grains three, every three hours; ephedrine, grains ¾, every three hours; and theamine, grains 7½ intravenously, every three hours. She continued to have repeated attacks of tachycardia which did not seem to produce symptoms. However, episodes of ventricular asystole continued also and with each episode, unconsciousness and a convulsion followed. Since the convulsions became more frequent and lasted longer, epinephrin hydrochloride 1-1000, minims three every 30 minutes, was given for two hours. This had no effect, and her heart finally ceased permanently. The final mechanism of death was unfortunately not recorded.

It is possible that larger doses of atropine might have been beneficial in interrupting the efferent vagal reflex which probably was responsible for the quickly changing cardiac mechanism, particularly heart block.

Permission for postmortem examination of the heart alone was obtained. This was found to weigh 350 grams. Both coronary arteries were found to be yellowish and moderately firm. The walls were thick and the lumen almost completely occluded so that a probe could not be passed. In the right circumflex, almost total obliteration was present at a distance 4 cm. from the orifice. The descending

branch of the left coronary was also markedly narrowed 1 cm. from its orifice. A thrombus 3 cm. in length was immediately proximal to this point. The endocardium and valves were not remarkable. Recent infarction was found to be present—involving the interventricular septum and the anterior and posterior wall of the left ventricle.

DISCUSSION

In the first two cases efforts to combat the arrhythmia were successful, but the patients died as a result of heart failure. In the last case the arrhythmias were not controlled, and the patient died as a result of them. Atropine and intravenous aminophylline were not given in the first two cases, and, in the last, atropine was not given in full doses. The experimental work indicates that these drugs should be given in large doses to all patients who have developed or who are suspected of having developed myocardial infarction. Papavarine may also be added to this armamentarium.[4]

SUMMARY

Three cases of myocardial infarction with convulsions have been presented. The underlying mechanism in each has been discussed. The treatment of these conditions has been briefly reviewed.

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DISCUSSION

DR. J. EDWIN WOOD, JR., Charlottesville: It is hard for us to visualize the real importance of this paper, and I shall endeavor to recapitulate some of Dr. Beckwith's findings for emphasis.

The fact that Dr. Beckwith's patients did not survive does not detract from the value of this report. It so happens that his cases had large cardiac infarctions. The same physiological mechanisms which his cases illustrate may, however, also appear in some people with small coronary infarctions, who may be saved for an extended outlook. Dr. Beckwith, therefore, presents this description of his patients quite rightly as examples of certain unusual cardiac mechanisms with added comments on management.

In brief, Dr. Beckwith presents three cases and two essential cardiac mechanisms. The first mechanism is complete heart block with Adams-Stokes syndrome and the associated syncope. The second mechanism also brings about cerebral ischemia through ventricular tachycardia. One case exhibited both ventricular tachycardia and asystole as well. Such an experience in a brief period is rare and Dr. Beckwith has reviewed the problems admirably.

He has explained how either or both of these mechanisms may occur in cardiac infarction apparently as a result of a strong cardio-sensory-vagal reflex with resultant coronary spasm and further myocardial ischemia. The value of atropine to break up this reflex has been made clear.

What are we to do when electrocardiographic studies are not available? No general rule is entirely safe, but it would seem logical to use atropine in those cases of coronary infarction associated with slow ventricular rates, certainly for the first day or two, and longer if the bradycardia persists. Again, strangely enough, atropine should be used where bursts of tachycardia occur associated in the periods between with showers of premature beats, thus indicating that ventricular tachycardia may exist. It is still not altogether clear that atrophine should be used in all cases routinely, and we have recently had instances in which atropine was wisely withheld. Here, as always, good clinical judgment must decide.

Clearly there are times for the use of ephedrine, quinidine and combinations of each of these, perhaps with atropine. However, Dr. Beckwith's paper clearly illustrates that at least quinidine should not be given routinely, as is often recommended. Theophyllin-ethylenediamine has its proper place as does hypertonic glucose solution intravenously, but again the routine use of any of these agents cannot be recommended.

As close as we can now come to the truth, it seems likely that in the early states of coronary infarction where the cardio-sensory-vagal reflex is strong, atrophine is always indicated. It is even possible that atropine is routinely indicated in the early stages of myocardial infarction. This must await further observation.

DR. PAUL D. CAMP, Richmond: I should like to say just a few words along this line. I have recently seen a very interesting case. The Adams-Stokes syndrome occurred after coronary occlusion in a patient who had had some heart disease prior to that and had congestive failure. Luckily, I got an electrocardiogram on him immediately, which showed complete auriculo-ventricular dissociation. He did not have any more spells of Adams-Stokes or cerebral anoxemia right at that time. I had given orders for both ephedrin and adrenalin to be left in his room. I happened to be there in the room the next morning when he had an attack. The nurse had used up the adrenalin, but we got some immediately and gave it to him subcutaneously. I admit that in some cases it might start ventricular fibrillation, but in this case it did not, and he got along very nicely. I gave him oxygen and then kept him under an oxygen tent. About five weeks later his family doctor let him get up some, and he had another series of spells, which were very

nicely relieved by the ephedrin at first and then the adrenalin.

I do think that in the cases in which there is complete A-V block, and you happen to see them completely unconscious from convulsion, it is safe to use adrenalin at that time and ephedrin afterwards. And, of course, use the atropin and aminophyllin too.

Then there is one other case I have seen, who had occasional attacks of complete block, and in between times his electrocardiogram did not show any evidence of heart-block whatsoever. Those cases throw us off from time to time, but it is important to remember that those cases may occur.

I enjoyed the paper and the discussion very much.

DR. BECKWITH, closing the discussion: I thank the gentlemen for their discussion.

This condition has been very interesting to me because recently we have seen a number of cases of other types of vagal hyperstimulation—that is, carotid sinus syndrome. We have been able to control several of these by atropine, but in one operation was required. This is only partially comparable to the present discussion. We have made it a policy to routinely give atropine to all patients whom we suspect of having sustained a recent myocardial infarction, but we don't know just how long we should keep this up. Aminophylline is also administered intravenously at the same time. Several cases, I am sure, have responded very dramatically, but in others the pulse rate has increased. I am not at all sure that some harm might not result.

OCD Advises Gas Cleansing Stations at Hospitals.

Hospitals should make complete plans for the immediate establishment, when needed, of "gas cleansing stations" for the care of injured persons who have been exposed to war gases, the Medical Division of the Office of Civilian Defense advises in Operations Letter No. 124 (Supplement No. 4 to Operations Letter No. 42). Large communities should establish at least one gas cleansing station without delay for training purposes.

The OCD recommends that the term "gas cleansing" be used to describe the procedure of removing vesicant liquids from persons and that the term "decontamination" be reserved for areas and objects.

The primary purpose of gas cleansing stations is the protection of hospitals and casualty stations and their staffs and patients from contamination by injured persons who have been exposed to vesicant agents, the Operations Letter points out. Contaminated persons who are not disabled are expected to cleanse themselves in the nearest private home or in other local facilities.

Existing facilities in casualty receiving hospitals must be converted into gas cleansing stations, it is pointed out, since under present conditions of scarcity of materials and manpower, construction of new facilities is generally not justified. Hospital facilities that should prove suitable are suggested as follows: hydrotherapy rooms, nurses or internes' locker and shower rooms, part of the outpatient department, garages or other separate structures. In the event these are not available, facilities to care for persons who are both injured and contaminated must be arranged in schools, gymnasiums, swimming pools, shower rooms, club houses and community centers.

Cleansing stations should be equipped to take care of one-third to one-half of the hourly casualty receiving capacity of the hospital to be served, the OCD recommends. The professional staff will consist of Mobile Medical Teams assigned when the station is activated, supplemented by additional attendants from the Emergency Medical Service. In addition to cleansing and emergency treatment, the staff of the gas cleansing station will assist in undressing the injured, moving stretchers, caring for clothing and valuables, maintaining supplies and dressing wounds.

It is recommended that cleansing stations be established at or near hospitals and casualty stations which they are to serve. Every hospital that may be required to handle an appreciable number of casualties should have access to such cleansing station facilities.

The local Chief of Emergency Medical Service is responsible for the development of these stations, with the advice of the Senior Gas Officer of the community.

FURTHER OBSERVATIONS ON THE TREATMENT OF ECLAMPSIA*

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My choice of a subject may seem strange for a paper to be read in Boston, where a third of a century ago, Mrs. William Lowell Putnam started her prenatal clinics. I take my hat off to this great work. Following her lead I started two clinics in Richmond, and for several years sat around four afternoons a week waiting for patients. These clinics are now going concerns, but the treatment of eclampsia is still a major problem with us. Deaths from the toxemias of pregnancy lead all causes of maternal deaths in Virginia. If one reviews the treatment these women received, as I have had to do as chairman of the Maternal Health Committee of the Medical Society of Virginia, one is struck with the bizarre forms of treatment and over-treatment that prevail. It is very evident that there has been, and still is, a lot of bad obstetric teaching. And so, while you may have stopped having eclampsia in Boston, you still train medical men, and some of them will practice in the South. Therefore, a discussion of the treatment of eclampsia at this time is not as inappropriate as it may seem.

The father of Medicine[1] was not greatly interested in the treatment of eclampsia. In his Aphorisms (V:30) he says it proves fatal to a woman in a state of pregnancy, if she be seized with any of the acute diseases. Five hundred years later Galen interprets this to include epilepsy, apoplexy, spasm, and tetanus.

To the ancients, convulsions were convulsions, whether they occurred in men, women, or children. If they occurred in pregnancy, it was merely coincidental. To some, the pregnancy influenced the prognosis. For instance, Paulus Aegenata,[2] one of the Greeks who wrote wisely on obstetrics, in his chapter on epilepsy, has this to say, "It has also been seen to proceed from the uterus in females, at the time they were pregnant, for after delivery, it ceased." It is interesting that he, along with Pliny, and others, recommended hellebore, both black and white. The white hellebore is thought to be the same as veratrum alba.

It was not until the latter part of the 18th century, or the beginning of the 19th century, that eclampsia was considered to be a separate disease. According to Kosmak,[3] Bernhart,[4] and others,[5] Francois Boissier de la Croix de Sauvages was the first to use the word eclampsia to denote the convulsive form of the toxemias of pregnancy. Duget[6] says that Madame Lachapelle was the first author to consider eclampsia as a distinct morbid entity.

The treatment accorded these patients in the middle ages, as one would naturally expect, was "humoral" bleeding, purging and blistering. As the seat of the disease was thought to be in the head, the therapy was directed to that part of the body. Thus the temporal artery or the jugular vein was opened by preference. The head was shaved so that the cupping or blisters could be placed as near the source of the trouble as possible. In addition, they responded to the primitive urge to terminate pregnancy, just as we do today when confronted by an unusual condition in a pregnant woman. Some of us in the great influenza epidemic of 1918-19, for example, practiced abortion in order to save the woman from a death from pneumonia. We are not surprised therefore to learn that Guillemeau[7] in 1609 treated convulsions in pregnant women by podalic version and extraction, a new technic he had learned from his master Paré. On page 117 of the English translation he says, "And concerning convulsions, they are very dangerous: because the braine being hurt, it cannot affoord such store of spirits as are needful, for the respiration of the Mother, and the childe, who breathes onely by means of the spirits, that are imparted unto him by the arteries of his mother, which causeth him to be choked & stifled. Besides, the great convulsion, makes the Midrife, and the muscles of the upper belly, move so violently, that the childe is much shaken, and puts both him and his mother in danger to be stifled, and die. The mother and childe must be succoured without delay which shall be done by delivering her, and this ought to be done either by the help of a surgeon or else a very skillful midwife."

At a somewhat later date, Mauriceau[8] taught that when flooding is accompanied by faintings and con-

*Read before the Obstetrical Society of Boston, October 20, 1942.

vulsions, the woman is to be delivered at once by gently stretching the mouth of the womb with the fingers followed by internal podalic version and extraction.

As new antispasmodics, sedatives, and narcotics were discovered, they were tried out in the treatment of puerperal convulsions. Velpeau[9] says few if any such drugs have failed to be used at one time or another. The same can be said of many therapeutic technics, lumbar puncture,[10,11], decapsulation of the kidney,[12] etc. Thus de La Motte[13] in 1721 reported complete relief from the convulsions in one case and temporary relief in another followed his disengaging the fetal head so that the mother was able to empty a greatly distended bladder.

Opium was one of the first drugs used. It had its advocates and those who condemned its use. Alexander Hamilton[14] is frequently quoted as saying he never saw a patient recover to whom the drug was given early. Hamilton relied chiefly upon bleeding. If the woman were in labor, he ruptured the membranes and assisted the delivery whenever it were possible. Merriman[15] also was opposed to opium and favored forceps delivery after full dilatation. On the other hand, Denman[16] was in favor of giving opium freely and was opposed to artificial delivery. In more modern times G. Veit was the champion of morphine in Europe and McPherson[17] in this country. McPherson's plan was to give morphine until the respirations were reduced to 8 per minute. When this is done, the woman has no more convulsions.

Fleetwood Churchill[18] occupies a borderline position between the old and the new. He says, "The division should be made into the sthenic and asthenic. The latter should be bled cautiously. The main reliance in the asthenic cases must be counter-irritation to the head and neck, cold in moderation, calomel, opium and, I believe, upon anesthesia." Channing[19] had already used ether in 10 cases with the recovery of 6 mothers and Churchill cites reports of isolated cases of the use of chloroform in the *Lancet* and the *Edinburgh Monthly Journal.* And thus it went with the other sedatives, chloral, paraldehyde, the barbiturates, etc. Vignes,[20] in his address before the International Congress in Amsterdam in 1938, gives an excellent historical account of each drug and therapeutic procedure. In view of the recent work of Bryant and Fleming[21] it might be well to go into a little more detail about the history of veratrum viride. In discussing Jewett's paper[22] Fordyce Barker said that the drug was first prepared by Tully and Ives of Connecticut. Fordyce Barker introduced the drug into New York and used it extensively in fevers and various convulsive states, but did not use it in eclampsia. Baker,[23] of Eufaula, Alabama, like Barker, used the drug in a variety of conditions, both in adults and infants. He reports that he used it successfully in one case of postpartum eclampsia. He did not think it wise to use it in intrapartum eclampsia for fear the medicine would stop uterine contractions. Twelve years afterwards, in 1871, Fearn[24] reported ten cases treated with veratrum viride and several others treated by his colleagues. For some time after this report the treatment was known as the Brooklyn method. In 1887 Rushmore[25] collected 41 reports with a total of 85 cases treated in Kings County. There were 65 recoveries. In two cases the convulsions continued in spite of the veratrum viride. He was of the opinion that veratrum viride had little effect in reducing the mortality from eclampsia, and makes the statement that sounds curious to modern ears that the "modern reduction of maternal mortality from 30 per cent to 14 per cent is due to the substituting chloroform for indiscriminate bleeding". Jewett,[22] in the same year, is more enthusiastic about veratrum viride and says that if the pulse is reduced to below 60 per minute no further convulsions occur. Theophilus Parvin[26] was also an advocate of the use of veratrum viride, and Reed[27] mentions the fact that Parvin reported 284 cases treated with veratrum viride before the International Congress of Gynecologists at Geneva (1896) with a mortality of 8 per cent. Bacon,[28] a fellow townsman of Reed's in the same year, was of the opinion that the drug was of doubtful value. In the same year (1905) the treatment of eclampsia was discussed by the American Gynecological Society.[29] Kirkley was of the opinion that venesection was the best treatment but that veratrum viride was almost equally as good. Cragin[29] relied upon chloral, chloroform, veratrum viride and enemata. Zinke[30] gave Reamy the credit for introducing the remedy to Cincinnati. He concurs in Jewett's dictum that if the pulse rate be kept below 60 per minute, there will be no further convulsions. In 1917 Cragin[31] reported that in the preceding 10 years, he had reduced his maternal mortality from eclampsia from 28.3 per cent to 14.5 per cent. He

attributes this change to substituting ether for chloroform and to using less speed in terminating labor. He uses veratrum viride in place of venesection. Williams,[31] on the other hand, preferred bleeding. He ran a series of cases in which every other one was treated with veratrum viride and the results were not quite so good. The idea that veratrum viride was a substitute for bleeding was rather widespread. Moran,[32] who confesses that Zinke had converted him from radical treatment to the conservative plan, says that he does not use veratrum viride because he much prefers to bleed outwardly than inwardly. W. D. Porter[33] recommended veratrum viride as a prophylactic against convulsions. With Brammer's[11] report of the treatment of two cases, veratrum viride disappeared from American literature until Bryant's[34] first report in 1935. There have been two reports[35,36] in British literature and both were favorable.

About the beginning of the present century, many workers began combining a number of drugs and treatments according to a fixed schedule. The best known of these are the Stroganoff[37] and Rotunda[38] methods. The Stroganoff treatment has varied somewhat since it was first published in 1897. It consists principally of a sequence of morphine given hypodermically and chloral given by rectum. The importance of avoiding all sources of irritation of the patient is stressed—a darkened room, inhalations of chloroform before a hypodermic injection is given, etc., and, finally, oxygen inhalations during and after each convulsion. Recently he[39] has added the intravenous use of magnesium sulphate to his treatment. His maternal mortality varies from 6 per cent to 2 per cent. Zweifel,[40] an early convert to the Stroganoff treatment, combined with it a more liberal use of venesection than the author uses.

The Rotunda[38] method relies principally upon morphine, gastric lavage, purgation, and starvation. Tweedy, the originator of the treatment was convinced that the absorption of food, particularly of milk, from the intestinal tract was a contributing cause of the convulsions. He, therefore, stressed the importance of keeping the gastro-intestinal canal empty, and devised a special scheme of dieting, to be followed as the patient recovered from her convulsions.

These treatments and their various modifications gave such good results that a great many believed that it was no longer necessary to rapidly empty the uterus in antepartum and intrapartum eclampsia as had been the custom. Such treatments were grouped together under the head of conservative treatment. In the meantime great improvements in technique and anesthesia were taking place, and the believers in the radical treatment no longer resorted to accouchment forcé, Duhrssen's incisions and vaginal cesarean sections. They, in turn, could show impressively low mortality. And so the pendulum has swung back and forth with, in the main, constantly improving results. It is, therefore, quite important to know the date of the series when one compares results. It is obviously unfair to compare the 22 per cent mortality of cesarean section treated cases years ago at the New York Lying-In Hospital[17] with the 7.7 per cent at the Chicago Lying-In Hospital[41] at a more recent date.

To add to the statistical confusion, a third group follows the "middle line treatment", i. e., if the patient responds more or less promptly to the conservative treatment, so well and good, but if she does not, a section is done. Finally, there is a group,[42] as yet unnamed, who, if they see the patient within three hours of the first convulsion, terminate the pregnancy at once.

Dieckmann,[43] in his excellent monograph, has a table which shows the results of all the modern writers on the subject. The maternal mortality varies from 2 per cent to 40 per cent. In evaluating results one must know not only the size of the series and the date, which show in the table, but also whether the cases are antepartum, intrapartum, or postpartum, and whether they are seen early or late in the disease. Most series are small at best, and, if subdivided, have no statistical significance. No doubt Dr. Kellogg,[44] in his proposed central station for the study of toxemias, will solve this problem and there will be sizable groups of antepartum eclampsia treated by cesarean section under local anesthesia, for instance, to be compared with another sizable group treated by the Stroganoff method of the same date. But this problem will not be solved even then. There still will remain an intangible something that will escape the reports.

Last spring the President of the American Association of the History of Medicine, Dr. J. H. Elliott,[45] spoke of observation and interpretation, and cited as an illustration Cellini's account of his attack of

the French disease. After relating how he caught the disease and how he cured the secondary eruption by taking guaiacum, he goes on to say "Sometime afterwards I sought to mend my shattered health, and with that in view I betook myself to shooting when the winter came in. That amusement, however, led me to expose myself to wind and water, and to staying out in marshlands; so that, after a few days, I felt a hundred times more ill than I had been before. I put myself once more under doctor's orders, and attended to their directions, but grew always worse. When the fever fell upon me, I resolved on having recourse again to the wood; but the doctors forbade it, saying that if I took it with the fever on me I should have a week to live. However, I made up my mind to disobey their orders, observed the same diet as I had formerly adopted, and after drinking the decoction four days, was wholly rid of fever. My health improved enormously". . . . Dr. Elliott considers this a record of syphilis cured by fever therapy. Cellini's observation was good but his interpretation was erroneous. While I was listening to Dr. Elliott's address, I could not help thinking that if he had not wanted to use an illustration from literature, the treatment of eclampsia would have afforded him abundant examples.

Until its toxic effect upon the liver was discovered, chloroform was considered the remedy par excellence for puerperal convulsions. Rushmore,[25] for instance, considered the reduction of maternal mortality from 30 per cent to 14 per cent to be due to substituting chloroform for indiscriminate bleeding. We now believe the sodium ion to be bad for patients suffering from toxemia of pregnancy, but not so very long ago, normal salt solution was quite commonly employed. E. P. Davis, to cite one authority, in discussing Cragin's[31] paper, advocated venesection followed by salt or soda solution. Russell R. de Alvarez[46] treats toxemia of pregnancy by hydration, and Arnold[47] just as strongly advocates dehydration. And so it goes. What one generation thought was valuable, the next generation proves to be actually harmful.

When I was in medical school, I was taught that the eclamptic should be delivered by accouchement forcé as soon as you saw her. When this was impossible, a section was to be done. There was no doubt in my mind as to the proper treatment. While my record did not equal that of David's or Saul's, it was bad enough. And yet, because I was doing what I believed was the only right and proper thing, I went my way oblivious of the bad results. Later, when articles began to appear in the literature about the Dublin treatment and the Stroganoff treatment, I checked my results and was surprised to find that my maternal mortality was 31.6 per cent.[48] Of my 38 cases, accouchement forcé had been done nine times with four maternal deaths. Midforceps operation had been done five times without a preceding accouchement forcé with one maternal death. Six mothers had been delivered by cesarean section with two maternal deaths. My next 58 eclamptics were treated with morphine, venesection, gastric lavage and colonic irrigation. My maternal mortality was 25.9 per cent. Again, I was surprised. I tried to find out why these patients died. My experience corresponded in the main with that previously published by Parvin.[26] He says, "Death may occur from asphyxia, during a long tonic convulsion, but this is rare; the majority of patients die during coma by a 'slow asphyxia'. Others die from congestion or cerebral hemorrhage. Pulmonary edema is in many the cause; still others perish later from deglutition pneumonia. The eclamptic is more liable to post-partum hemorrhage and to puerperal accidents, and a number surviving the convulsions perish from puerperal infection." Except for anuria, this covers the situation. It is true that Herrmann[42] cites a case of a woman dying from striking her head on the bedpost during a convulsion. I, then, laid down certain principles to guide me in the treatment of eclampsia. They are: 1. Stop the convulsions. 2. Good nursing and rest. 3. Water and possibly intravenous glucose solution to promote kidney activity, and 4. Digitalis. The importance of stopping the convulsions needs no comment. Good nursing care is of prime importance, and this should include avoidance of external stimuli, such as bright lights, noise, jarring the bed. The nurse should be prepared to protect the tongue against injury during a convulsion. A towel or napkin rolled up like a bit and placed transversely between the teeth at the beginning of a convulsion is better than the various hard objects commonly used. Because I want the patient to get as much rest as possible, I am opposed to gastric lavage, colonic irrigation, purgatives and the various means that have been used to

produce sweating. The best way to give water is through the stomach. In this way the body has a defense mechanism against too much fluid, and there is less danger of overstraining the heart. If the patient is conscious, she is allowed to drink water or sweetened fruit juices whenever she wants to. If, on the other hand, the patient is unconscious, a nasal tube is slipped into the stomach and a pint of water is poured in every eight hours. In exceptional cases, when the urine is scanty or absent, the patient is given glucose solution intravenously. If edema is not marked, 500 or 1000 cc. of a 10 per cent solution is given slowly. In the presence of obvious edema, I prefer a small quantity of a 50 per cent solution. The digitalis is given for the sake of the heart. I have never seen pulmonary edema develop after this remedy has been used. I have been in the habit of giving an adequate dose as soon as possible, usually immediately after the medication for stopping the convulsion has been given. In case the patient already has pulmonary edema, venesection should be seriously considered. For years I had thought that digitalis in eclampsia was original with me, but Jacobs[49] says that Irish and Welsh folklore mentions foxglove not only against the evil eye and the influence of witches, but also as an external application against eclampsia. Quite recently I ran across a reference in Velpeau[9] that digitalis purpura was recommended by Hamilton in eclampsia if there is edema of the limbs.

As an example of what digitalis will do in some of these neglected cases, I would like to report briefly the following case: Mrs. W. J. S., aet. 20, was admitted to the Johnston-Willis Hospital, April 22, 1938, in deep coma. From the note of her physician and from her husband I obtained a fairly satisfactory history. There had been practically no prenatal care. When her ankles swelled a week or so before, the husband consulted his doctor, who asked for a specimen of urine. When it was obtained, it was found to be loaded with albumen. Before any treatment could be instituted, the patient went into labor. When she had a convulsion at noon, April 21st, her doctor delivered her with forceps under chloroform anesthesia. Two more convulsions followed in rapid succession. 20 cc. of a 10 per cent magnesium sulphate solution were given intravenously, also 2 capsules (6 grains) of sodium amytal by mouth. The convulsions stopped for a while, but returned in the night when the magnesium sulphate was repeated and sodium amytal was given by rectum. She had some 15 convulsions altogether, the last being at 1 P. M. April 22. She was admitted to the hospital at 7:30 P. M. cyanosed and in coma. Axillary temperature was 104.8, pulse 160, respirations 32, blood pressure 150/100. The pupils were small, equal, and fixed. The tongue was greatly swollen. There was no edema. Moderate coarse rales were heard over the entire back and there was dullness over the lower right back. The abdomen was flat, except for the hard rounded uterus that extended up to the navel. The patient looked extremely sick. An ampule of digifolin was given at once. A nasal tube was introduced and a pint of water and 3 drams of digitalis were poured into the stomach. Eight hours later the nasal tube was again introduced and the water repeated. This time the tube was left in place as it seemed not to disturb the patient. The patient was given fluids, glucose solution, and cream of tartar lemonade every 8 hours. On April 23, patient was given 50 cc. of a 50 per cent glucose solution intravenously. The sclera were markedly edematous and there was a tinge of jaundice. The patient voided in bed. There seemed to be no other change in her condition. In the afternoon the temperature dropped to 102 but the pulse remained 160. The blood pressure was 144/98. On April 24 the temperature became normal. The pulse rate dropped to 110 and the respirations, which had varied from 40 to 50 per minute, were 30. The patient showed some signs of lessening coma and the nasal tube was withdrawn. By the 27th—the fifth hospital day—she had become rational and was allowed a low protein diet. For the first time a specimen of urine was obtained. It was amber, cloudy, alkaline and contained a trace of albumen. The patient was discharged on April 29th.

Various other procedures may be useful at times. Wilson[10] and Snyder[10] have reported excellent results in small series of cases from lumbar puncture. I have tried it several times, but it has not been much help to me. I have had to give artificial respiration several times, but not since I have adopted the plan outlined above. Possibly I have not made enough use of oxygen. Nicodemus[50] has recently reported impressive results with oxygen-tent therapy in eclampsia. Oxygen forms part of the Stroganoff

treatment and was spoken well of by Newell[29] and by Bacon.[28] Years ago, before this present series, I used it in one case intraperitoneally with happy results. The patient when brought into St. Philip Hospital was comatose, and markedly cyanosed. Her temperature was 105 and brown frothy fluid was spewing from nostrils and mouth. Both lungs were so full of fluid that it seemed hopeless to give oxygen by inhalation. I introduced a trocar through the anterior abdominal wall and connected it with an oxygen tank. The gas was allowed to bubble through sterile water and through the trocar until the abdomen became tympanitic. Within five hours the cyanosis and pulmonary edema disappeared, the temperature became normal and the patient recovered.

In regard to my first principle, i. e., stopping convulsions, we have an efficient means in the intravenous administration of a 10 per cent solution of magnesium sulphate, as first advocated by Lazard.[51] Some years later, a second efficient remedy in the form of sodium amytal intravenously became available. Between the two we should be able to control the convulsions in every case. Of the two, I prefer the magnesium sulphate, as, when it stops the convulsions, it wakes the patient up, with the result that the course of the disease is easier to follow and the subsequent treatment of the patient is simpler. On the other hand, when the convulsions are controlled with sodium amytal, the patient is put to sleep and it is sometimes difficult to tell whether you are dealing with a comatose or a narcotized one.

My present series dates from the appearance of Lazard's first article in 1925. As a matter of fact, the journal came just as I was called to see a patient in consultation at the Memorial Hospital, and I took it along with me to read in my spare time. The patient did not respond to morphine, and her doctor and I decided to try this new treatment. The response was dramatic.

Since that time, I have had 143 cases of eclampsia, which I have treated more or less according to the principles outlined. These have been consecutive cases. All have had convulsions that were seen by competent medical men. Usually the diagnosis of eclampsia offers no difficulty, but not always. During this time, I have had three cases of convulsions that I did not consider to be eclampsia. One was a case of hysterical convulsions that began on the 8th day postpartum. There was no albuminuria nor elevation of blood pressure. The hysteria disappeared after the removal of an inflamed appendix. The second case was that of a colored woman who was admitted to St. Philip Hospital in convulsions. She was comatose between convulsions and no history could be obtained. The urine contained albumen and the blood pressure was elevated. There was a rounded abdominal mass that extended upward to a little above the navel. She was treated with magnesium sulphate solution intravenously. When she recovered consciousness, it was learned that she was over fifty years of age. The abdominal mass turned out to be a fibroid. As her kidney condition seemed to be the more urgent, she was transferred to medicine for further treatment. These two cases, of course, are not included. The third case was that of an epileptic. As this patient died, she is included to be on the safe side. The details of this case will be given under deaths.

My series now consist of 144 cases, many of which have been reported previously.[48] Some of these were on the out-patient service of the Medical College of Virginia: some were seen in the hospitals of the Medical College of Virginia, when I was on service in these hospitals, and some were private patients. Most of the latter were seen in consultation. Very few had received any prenatal care. At least 49 were severe, as graded by Eden's classification. Thirty-nine had convulsions before labor started, forty-seven had convulsions during labor, and in twenty-five the convulsions started after delivery. I am ashamed to say that in 33 cases I am unable to say whether the convulsion occurred before, during or after labor. The only notes I have kept of the student cases are in code, and my code did not cover this classification. Eighty-four were white and sixty were colored. Thirty-seven were unmarried. The youngest patient was 12 years, a white child. The youngest colored patient was 14 years. The oldest patient was 43 years of age and she was also a primipara. The average age was 23 years. Fifty-nine were in their teens; fifty-nine were in the third decade of life; twenty-two in the fourth decade, and three were above forty years of age. The extremes of the child-bearing period are better represented than in an average group of pregnancy patients. One hundred and seven of the 144 were primiparae. There were three sets of twins.

Seventy-three babies survived. The fate of ten babies is not known. This gives a survival rate of 53.3 per cent. Six mothers died, a maternal mortality of 4.16 per cent.

These deaths have been reported previously,[48] but I am repeating them at this time to show how hard it is to stick to one's principles.

No. 6474. Mrs. S. M., age 36, white multipara. Admitted 11-9-25, 5:30 A. M. Patient brought to the hospital in an unconscious condition. Had several convulsions before admission and several convulsions following admission. B. P. 240/140. Venesection 300 cc. Blood sugar 180 mg. Urea nitrogen = 22 mg., npn = 44. Urine, acid, sp. gr. 1021, albumin 4 plus, hyalin and granular casts. Treatment: Morphine gr. ½ to ¼ every 2 to 3 hours. High colonic irrigation. Venesection, delivery of 13½ lb. still-born male child. Patient died at 3 P. M. with evidence of pulmonary edema.

No. 6481. E. P., colored, age 36, married, admitted 6-11-26, multipara. History of convulsions and unconsciousness. Respiration labored. Evidence of pulmonary edema. B. P. 230/130. Patient had two convulsions after admission. Delivered still-born male 12 hours after admission. Wass. neg., Hb. 80 per cent, R. B. C. 4,550,000, Leucocytes 9,400. Polys. 64. Lymphocytes 36 per cent. Urine, acid, sp. gr. 1034, Albumen 3 plus, Acetone plus. Leucocytes plus, R. B. C. plus. Treatment: Morphine gr. ½ every 4 hours. Digitalone 1 cc. q. 4 hours. High colonic irrigations. Saline proctoclysis, caffeine and sodium benzoate gr. iii q. four hours, last twelve hours. Patient died 36 hours after admission.

No. 6508. Colored, primipara, age 33. She had no prenatal care. Blood Pressure was above 200 mm. of Hg. Her urine contained casts. Treatment consisted of intravenous magnesium sulphate, digitalis and rest. The delivery was spontaneous, the labor lasting forty-four hours. The baby, a female, was still-born. The mother died of pneumonia on the fourteenth day post-partum.

No. 6509. Colored primipara, 16 years of age. She had normal blood pressure and urine, and a rachitic pelvis. The convulsions were easily controlled. The patient went into labor several days later. After a trial labor of fifty-two hours, a cesarean section was done. The mother died of peritonitis on the third day.

No. 6566, white, primipara, age 21, admitted June 30, 1928, in convulsions. Her sister, who came with the patient, said that the patient had whooping cough at the age of 2 years and was paralyzed on the right side for five or six years afterwards. For the past five years she had been having convulsions, many of which were nocturnal. She had been under the care of a chiropractor and her pregnancy was said to have been normal. When she began to have convulsions she was brought to the hospital, a distance of ninety miles. The patient was having one convulsion after another. She was deeply cyanosed. Her pupils were pin point in size and fixed except just after a convulsion, when they were widely dilated. Pulse varied from 130 to 140, respiration 30 per minute. B. P. 100/80 except after a convulsion when the systolic pressure rose to 120 or 125 mm. of Hg. A thick yellow mucus was running out of her mouth and nostrils. There was an abdominal tumor that extended several finger-breadths above the navel. There was no urine in the bladder, although she was said not to have voided in the past 8 hours. Treatment consisted of 4 cc. of a 50 per cent magnesium sulphate solution intramuscularly, 60 cc. of the tincture of digitalis per nasal tube, 4 intravenous injections of a 10 per cent solution of magnesium sulphate, two intravenous doses of 20 cc. of 50 per cent glucose solution, a total of 2½ grains of morphine hypodermically, several doses of chloral and sodium bromide per rectum and a lumbar puncture which yielded a few drops of clear fluid. The patient died in convulsions twelve hours after admission to the hospital.

No. 7024. White, primipara, age 21. Admitted May 31, 1929, in convulsions, having been brought a distance of 50 miles after the convulsions had started. She had been under the care of a negro doctor, who had advised her the day before that she ought to go to the hospital. Her face, vulva, and feet were greatly swollen. B. P. 190/110. She had had 1 gr. of morphine before coming to the hospital. I gave her two intravenous injections of 20 and 15 cc. of a 10 per cent solution of magnesium sulphate, which had no effect upon the frequency of the convulsions. A lumbar puncture was done. The spinal fluid was cloudy and was under a pressure of 240 mm. of spinal fluid. Fifty mgm. of novocaine dissolved in the spinal fluid were injected. The blood pressure dropped to 165/120.

The patient had another convulsion and became very blue. As the cervix was about fully dilated, a version and extraction was done. After the delivery the blood pressure was 170/130. The convulsions continued in spite of two ¼ gr. doses of morphine, venesection (300 cc.) and intravenous glucose solution. The patient died in convulsions 2½ hours after delivery, and twelve hours after admission to the hospital.

To summarize, the first two patients who died were treated with colonic irrigation, and the first one received no digitalis. The third and fourth deaths were septic deaths after the eclampsia had been controlled. The fifth case was a known epileptic who was scarcely 34 weeks pregnant. Except for the anuria and the convulsions, she had no evidence of eclampsia. The last patient would probably have died, no matter what treatment had been used, but I wish I had been less energetic in my treatment.

I was quite proud of my results until June of 1940, when Bryant and Fleming reported 120 cases with only two maternal deaths, and these were due to bad obstetrics and not to eclampsia. In 1935 Bryant reported a maternal mortality of 9.9 percent. At that time, besides veratrum viride, he advocated sedatives, purgation, and alkalies in the form of sodium bicarbonate and sodium citrate. Now he depends more upon veratrum viride. He also gives 500 cc. of 20 per cent glucose solution every 6 hours until consciousness returns. He uses magnesium sulphate intramuscularly, routinely. He gives no sedatives except in extreme restlessness or in labor, and he now uses a salt free diet. He induces labor in antepartum eclampsia only after the patient has recovered from her eclampsia.

I was so much impressed with his second paper, that I went out to see Dr. Bryant at my first opportunity. I did not see him treat any patients, but I made rounds with him. His series has grown to 140 and he has lost no more mothers. Upon my return from Cincinnati, I added veratrum viride to my list of ways of controlling convulsions. I have tried it upon the only two cases of eclampsia that I have had since, and I have watched its use in a third case, that of a patient who was being treated by Dr. J. M. Whitfield, Jr. All three mothers recovered. One baby was lost, after a long tedious labor that was complicated by a constriction ring. My own experience with the drug is too limited to be worth anything, but it is the main reliance[21] of the men who have obtained the best results in the treatment of eclampsia and it is for that reason worth consideration.

SUMMARY

A bird's eye view of the treatment of puerperal convulsions through the years shows a general reduction of the mortality with increasing interest in the condition regardless of the manner of treatment. Modern treatment of eclampsia is divided into two main groups, the radical and the conservative, with several sub-groups in between. The radical treatment consists of terminating pregnancy as soon as possible. The conservatives, of whom I am one, believe that the eclampsia should be treated, and the pregnancy should be disregarded. If the patient is in labor, the labor should be conducted along obstetric principles, always bearing in mind that an eclamptic stands a general anesthetic badly, and is rather prone to infection. In antepartum eclampsia, no effort should be made to induce labor until the patient has recovered from the eclampsia and is putting out a good quantity of urine. I am in accord with McCord[54] who says that then all that is necessary to do is to rupture the membranes. One group of middle-grounders believes in treating the patient along conservative lines so long as she improves. They say that an occasional severe case that does not improve upon such treatment, had best be treated by terminating pregnancy. Another group terminates the pregnancy if it can be done within three hours of the first convulsion. Otherwise, they follow the conservative plan.

The prevention of eclampsia is not discussed, not because it is unimportant, for it is the most important aspect of the treatment of eclampsia. It was not discussed because, with the exception of the question of salt-free diet as advocated by Harding and Van Wyck, DeSnoo and others, there is such an unanimity of opinion that there is nothing to discuss. A series of 144 consecutive cases of eclampsia is presented. These patients were treated more or less in accordance with the following four principles: First, stop the convulsions with magnesium sulphate or sodium amytal intravenously; second, good nursing-care with emphasis upon rest for the patient; third, fluids by way of the gastro-intestinal tract, and, when anuria is threatened, glucose solu-

tion by vein; and fourth, digitalis. The uncorrected maternal mortality in this series was 4.17 per cent. Reference is made to another series[21] treated along the same lines, using veratrum viride to stop the convulsions, with an uncorrected maternal mortality of 1.6 per cent.

In conclusion, as I look over the efforts of our predecessors to cure puerperal convulsions, from the vantage of present day knowledge, I would criticize the blisters, cuppings, lavage, colonic irrigations and hypodermoclysis as being too annoying to the patient. Bleeding might be useful in rare cases but the danger of depleting the patient's resistance is great. Administration of fluids by vein carries the risk of overloading the right side of an already damaged heart. Dehydration is conducive to anuria, a much dreaded complication. Normal salt solutions contain the wrong kind of electrolyte, etc. In the not too distant future, when the cause of eclampsia will have been discovered, our successors will look upon our discussion tonight, if they deign to look at all, as a lot of nonsense. I hope they will at least give us credit for doing our best according to our present lights.

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Medical Arts Building.

A Report on the Incidence of the Common Cold.

(Based on Surveys Covering a Total of 85,000 Persons by the American Institute of Public Opinion, Princeton, N. J.)

The importance of the common cold as a public health problem in wartime has been widely recognized. Colds are the largest single source of lost man hours in war production.

A study by the American Institute of Public Opinion showed that of 3,200,000 man-days of work lost in war industries during the month November 24-December 20, 1941, the common cold accounted for one-half. Those lost man days would have built one heavy cruiser, 224 medium bombers, or 1,600 light tanks.

Because of the importance of the common cold, as it affects the war effort, the Institute undertook a periodic check of the incidence throughout the United States, beginning in the fall of 1941.

Heretofore studies have been limited to selected groups, such as students, employees of various business concerns, and certain family groups. The Institute survey, on the other hand, covered a cross section of all segments of the total population, by geographical sections, income groups, size of family and age, during both summer and winter months. The study does not claim absolute accuracy since it had to rely on the layman's ability to recognize a cold.

The summary and principal conclusions show that the lowest incidence is between the ages of 20 and 29, and the highest under 10 years. The income was studied, and it was found that in the lower income groups, it was 60 per cent higher than those in higher income groups. The geographical distribution was found to be highest in the west central states where climatic changes are greatest and in the south. On the east and west coasts it was lower than the mid-west. One person in four went through the winter without a cold but even in mid-summer one person in every twenty was found to have a cold. February had the highest incidence, 18 per cent, while July was lowest with 5 per cent.

Incidence of colds by size of family. It might be expected that the larger family groups would be affected as result of contagion. This does not show up in the results; however, the income factor was equalized, with the following results. One person families—19 per cent were affected. Two to six persons, and larger families, showed 14 per cent.

Incidence by age groups:—Under 10 years, 7 to 28 per cent; 10 to 19 years, 4 to 18 per cent; 20 to 29 years, 5 to 13 per cent; (the lowest group); 30 to 49 years, 5 to 16 per cent; 50 years and over, 4 to 17 per cent.

Under additional findings, a question asked "was a doctor consulted?", indicated that about one-fourth of the families only had called a doctor. The same study was made in Canada with almost identical findings.

During the 1940 flu epidemic, it was shown by a study that it was more common in the south and west than in the eastern and east central states—here again the rural and small town population seemed to have suffered most. In the nation as a whole 25 per cent were affected, men 24 per cent and the women 27 per cent. Rural-urban ranged from 27 per cent farm residents to 20 per cent in cities over 10,000. The east central states showed 22 per cent while the south and far west showed 29 and 26 per cent respectively.

This study seems to have brought out some little known facts as to incidence, by various groups and localities, and seems worthwhile from a statistical point of view.

Abstracted by C. L. Outland, M.D.

VIRUS PNEUMONIA BY CONTRAST WITH OTHER TYPES*

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About four years ago Reimann, of Philadelphia, reported eleven cases under the title: An Acute Infection of the Respiratory Tract with Atypical Pneumonia—A Disease Entity Probably Caused by a Filtrable Virus. He did not claim to be the first to observe the disease, but he was the first to bring it into the bedside consciousness of clinicians. It did not fit into any familiar picture; therefore it was atypical. Various names have been suggested for it, including several which were proposed but not adopted for the pneumonia of the influenza epidemic of nineteen-eighteen. Since it is plainly pneumonia, and since it is more and more certain that a virus is the cause, the name virus pneumonia has gained rapid and general acceptance. It is probably not the name to be given it finally, for influenza and psittacosis seem to be caused by a filtrable virus, so that to call it virus pneumonia distinguishes the condition as poorly as if one should speak of bacterial pneumonia. Regardless of the ultimate naming, virus pneumonia is an established entity. Indeed, during the past few months, in true American fashion, so well popularized has the term become that it has been quite common to hear such a diagnosis made when there is no sign of consolidation, no x-ray evidence of such a condition, nothing but a respiratory infection with fever.

Before the advent of this newcomer, therapeutic advances had led clinicians to think of pneumonia increasingly in terms of etiology. Since virus pneumonia presents therapeutic indications different from pneumonia of other etiology, a rough classification of the pneumonias on an etiological basis will be presented, and the clinical picture of virus pneumonia will be contrasted with previously recognized types. The series can be taken up somewhat in the order of their emergence as major problems in modern experience, that is, roughly, in historical sequence.

CLASSIFICATION OF PNEUMONIAS

1. Pneumococcic pneumonia.
2. Bacterial invasion of depleted lung tissue.
3. Streptococcic and staphylococcic complications of
   (a) Measles.
   (b) Influenza.
4. Pneumonia caused by Friedlander's bacillus, B. typhosus, B. tularense, etc.
5. Virus pneumonia.

In the early years of the present century the textbooks dealt with lobar pneumonia and lobular pneumonia, the former due to the pneumococcus and the latter to invasion of lung tissue by any one of a wide variety of bacteria, more especially in marasmic infants and in elderly people confined to bed from any cause. In the winter of 1917-18, following upon measles in camps, there developed a form of broncho-pneumonia complicated by empyema, known as the empyema epidemic. In the latter part of 1918 came the influenza epidemic with its "Flu pneumonia" that ravaged a large part of the globe. A hodge-podge group of pneumonias, some long known and others more recently identified, is awkwardly introduced into the classification, for the sake of completeness. The latest addition to the family of pneumonias is the virus type. In order to set off this condition by contrast, the older types will be considered in some detail.

1. Pneumococcic pneumonia is the disease which characteristically involves one or more lobes of the lungs, so much so that the term is used synonymously with lobar pneumonia. Its clinical features are too well known to require emphasis—the sudden onset, chill, high temperature, early high leucocyte count, rusty or prune-juice sputum, pneumococci in cultures, its well-defined consolidation, and its frequent decline by crisis. At autopsy it shows a massive pathology, converting the lung into solid tissue, like liver. It is an ancient enemy of mankind, prone to strike at the strong as quickly as at the weak. It is the form of pneumonia in which important therapeutic advances have been made, so that it has become important to recognize it, in order that available therapy will not be neglected.*

2. The old lobular pneumonia, often superimposed upon hypostatic congestion in debilitated in-

*Read before the Staff of the Medical College of Virginia Hospitals, March 11, 1943.

*The contrast in the therapy of pneumococcic and virus pneumonia is omitted from the present discussion, since it is covered in another article, "The Treatment of Pneumonia and Its Complications," to be published later.

dividuals, though of great importance because of its frequence and its high mortality, will be passed over without detailed discussion. It may result from any one of a wide variety of lurking bacterial invaders, ready to take advantage of lung tissue when resistance is enfeebled by any cause. The literature will be searched in vain in the effort to find any reliable clinician who has asserted that the sulfonamids have greatly influenced the course of this type of pneumonia.

3(a). Up to this point the discussion has concerned itself with types which present themselves in the routine of practice, without assuming the dramatic quality of an epidemic sweep. Under the head now to be considered conditions develop which are never forgotten by any physician who has encountered them. To use a phrase belonging to the military vocabulary, one knows that hell has broke loose. Take the matter of the empyema epidemic in the camps in this country during the First World War. In the discussion of a symposium built upon the ponderous report of the Empyema Commission, one of the speakers rose and spoke artlessly as follows. Said he, "I was at Camp Dodge from the beginning and saw this whole epidemic. We were going along smoothly until all at once we were thrown into a sort of a convulsion by an epidemic striking us. There was nothing important about pneumonia before this epidemic came on. It seemed that we had said everything about pneumonia, but we found that there was a great deal to say. We are classifying pneumonias. We have divided them into two classes. One is the old fashioned pneumococcus pneumonia and the other is the streptococcus pneumonia."

At Camp Lee the records, I believe, will show that the epidemic appeared on December 28, 1917. Strictly speaking, the term empyema epidemic is too narrow, for there was an underlying pneumonia, and the accumulation of a purulent fluid in the pleural cavities was merely a conspicuous feature of a larger picture. It was conspicuous in its incidence and it was conspicuous because it introduced surgical procedures into the treatment; therefore, the name.

The empyema epidemic was an affair of the camps. It spared the civilian population. At Camp Lee measles had prevailed in the fall, and there were new cases of measles developing when the empyema epidemic broke. There was a definite impression that the latter was related to the former, but it could not be said that in the individual the lung disease was a complication of or sequel to measles. The patient with empyema may or may not have had measles. Most of the cases studied by the Commission had not followed other acute infectious disease. Perhaps it would be right to say that, based upon measles, the streptococcus acquired a virulence of epidemic proportions.

The earlier cases were startlingly sudden in onset, and early death was an even more startling feature. With or without the prodromal symptoms of an acute respiratory infection, the patient with this type of broncho-pneumonia would go down with a chill and a pain in the chest. Dyspnea was marked and the cough distressing. Cyanosis was usual and sweats were heavy. The temperature was irregular, the pulse and respiration rapid. The observations of the Commission led them to the conclusion that the patient with a large pleural effusion was less miserable, though not less ill, than the patient with an extensive broncho-pneumonia and no effusion. In most of the cases there was a leucocytosis of from 12,000 to 32,000. A hemolytic streptococcus could usually be isolated from the sputum, pleural exudate, and other sources. While other organisms were sometimes recovered, the streptococcus was greatly predominant.

The postmortem findings were those of a lung pocked and canalized by pus clear out to the pleural covering. There was intense congestion of the trachea and an interstitial type of broncho-pneumonia, with marked tendency to abscess formation, often just beneath the pleura. The pleural exudate was a thin, muddy fluid, though it might be a gelatinous material from which pus could be squeezed. The Empyema Commission was not impressed with the liability to involvement of other serous membranes, but the postmortem examinations at Camp Lee did reveal in the earlier cases a large incidence of purulent pericarditis, and a considerable number of instances of peritonitis. The truth is, the Empyema Commission arrived at Camp Lee when the strain was off. The incidence was much less high and the severity lessened. The Commission claimed a very low mortality in the cases treated by itself, in comparison with the much higher mortality "in this camp previous to the commission's

control of the cases." They thought that this might have been due somewhat to a change of virulence of the organism—a thing that was unquestionably true —but they thought their improved results were due especially to a late rather than an early operation. No one is interested now in fighting World War One over again, but on the highest authority it can be stated that the Commission was informed when it arrived that this lesson had been learned through experience. The mortality of this epidemic at the various camps was reported at 30.2 per cent. At one camp it was 84 per cent of eighty-five cases. A most pertinent question is, what would have been the effect of the sulfonamid drugs?

3(b). Sometime in the summer of 1918 came a wave of disease that was to become known as the influenza epidemic, really the influenza pandemic. It arrived in different countries at different times, following a course from east to west. It affected civil and military populations alike. After a flurry of scattered cases of a disease that ran its febrile course in two or three days, regarded as influenza, cases began to arise that were obviously complicated by pneumonia, and in the severer cases it was equally obvious that it was no ordinary pneumonia.

During the fall of 1918 Base Hospital 45, located at Toul, France, received 3,965 cases diagnosed as influenza or pneumonia. On the basis of physical signs and x-ray studies it was possible to classify the broncho-pneumonia cases according to the degree of involvement of lung tissue. Small well-defined patches were termed discreet; widely distributed signs, chiefly rales, with no large areas of consolidation were called diffuse; widely distributed signs, usually bilateral, with massive areas of consolidation on one side or both, were called confluent. While there was of course no sharply dividing line between the varieties, once the patient was put to bed it was rare that one of the lesser lesions was transformed into a graver type. It was the confluent type which died. It became possible to predict with fair accuracy from the appearance of the patient at first sight, whether the outcome would be good or bad. Those with massive lesions had a peculiar livid and sallow mixture of color in the skin, and a respiratory rate of forty or more per minute. In a certain group of 65 cases (of which 12 were regarded as lobar pneumonia) 34 had a temperature over 104°. Generally, the pulse was slow in proportion to temperature. In about 50 per cent hemoptysis was recorded. It was a really bloody sputum. Leucocyte counts under 10,000 were obtained in 45 cases. A leucocytosis did not point to recovery in the confluent cases, and a low or normal count was not of bad prognostic import in the less massive involvements. The prognosis seemed to depend chiefly upon the extent of pulmonary involvement. Empyema developed in only four of the 65 cases. There was a marked discrepancy in the bacteriology of the sputum, blood, pleural exudate, and the lung at postmortem. The last gave consistent findings. In all 12 cases in which cultures were made from the lung tissue, a streptococcus was obtained, the hemolytic streptococcus in nine instances.

One hundred and three autopsies were done, with findings corresponding to those done in other places. They gave rise to such names as "hemorrhagic broncho-pneumonia," "hemorrhagic necrotizing broncho-pneumonia," and "hemorrhagic pneumonitis." They were bloody, beefy lungs, in a state of decomposition so great that at times, in the attempt to lift it from the thoracic cavity the hand of the pathologist would sink into the muck. Even the consolidated area was very moist and indefinite. It ran in irregular bands through the lung tissue. There was a marked tendency to necrosis and to the formation of abscesses from 1 to 5 cm. in diameter. The bronchi were filled with pus. The trachea was usually hyperemic only. The peribronchial lymph nodes were swollen, hemorrhagic, or might contain abscesses. The pleura might show more or less hemorrhage, and in some cases a thin, brownish-yellow pus developed. The mortality all over the world was likely to be in the neighborhood of 30 per cent. The treatment was symptomatic, and the important part was to get the patient at complete rest in bed. Again the pertinent question which no one has had the temerity to answer, what would have been the influence of the sulfonamid drugs. In the few scattered cases seen subsequently, having the clinical characteristics of influenzal pneumonia, the sulfonamids have not proved their efficacy. One writer, David Smith, has expressed a restrained optimism. In the winter of 1940-41 there was in some parts of the country a

considerable epidemic of influenza. In the Durham, North Carolina, area, as reported by David Smith, the predominating organism cultured from the throat was a hemolytic staphylococcus aureus. When there was a complicating pneumonia it was very similar to that in the influenza epidemic of nineteen-eighteen. So also was the pathology. The staphylococcus was easily recoverable from the lungs.

5. Omitting discussion of the rarer, bacillary group of pneumonias, virus pneumonia may be described in contrast to the types that have been considered. Following Reimann's report of several severe cases, Reimann and Havens wrote under the title: An Epidemic Disease of the Respiratory Tract. In January, 1939, an epidemic of a mild disease of the respiratory tract began in Philadelphia, and it reached the proportions of the most widespread epidemic the authors had known in many years. They believed it to be of the same nature as the eleven cases previously reported. Out of 813 persons at the Jefferson Medical College and Hospital, 407 had the infection. About 100 were ill enough to be admitted to the hospital, and 25 developed pneumonia. The authors state that the disease resembles epidemic influenza in many respects, but it is caused by a different agent.

In virus pneumonia the onset is usually insidious, the first point of contrast with all other types save only the lobular pneumonia of debilitated subjects. After several days of symptoms quite like those of influenza, malaise, headache, chilliness, pharyngitis and dry cough, there may be signs suggestive of pneumonia but they are not likely to be conclusive. One or more areas may present dullness or suppressed breath sounds, though rales are the most frequent early finding. They may be confined to one lobe or may be heard in several lobes simultaneously or in succession. Bronchial breathing, egophony, and frank dullness may develop. Naturally one would expect such areas to show abnormal x-ray shadows. They may, but they may not. The x-ray shadows may be in other areas. Characteristically they are of a soft, infiltrative type, single or multiple, occurring about the hilus and extending into the lower lung fields. When the apices are involved the picture may resemble tuberculosis. The lesions tend to be patchy. Positive x-ray findings usually antedate the physical signs but the reverse may be true.

There is a peculiar incoordination in the timing of things generally. The fever may have been present for some time before the physical signs appear, and the signs may persist long after the fever has disappeared. Cough may be dry, or, if productive, the sputum may be blood-streaked, not prune-juice, nor often frankly bloody. Fever may be high but it is remittent. It may be biphasic, that is, it may recur when it seemed to have gone. It declines by lysis. It may last from two to seventeen days as a rule, but sometimes much longer, forty or fifty days. In the earlier part of the attack the leucocyte count is not often above normal, but it tends to rise later. Counts as high as 20,000 have been observed. Blood cultures are sterile. There is a notable lack of serious complications. Pleuritic pains and empyema are not a feature. Jaundice, vomiting and diarrhea may occur. Occasionally there are symptoms of encephalitis. The treatment is largely supportive and symptomatic. The sulfonamids are not helpful. The mortality is definitely low.

The differential diagnosis is not always easy. One often wonders whether or not to give one of the sulfonamids. The leucocyte count is helpful in this decision, but it is not conclusive. It may not be elevated in pneumococcic pneumonia, whereas, as stated, it can be so in virus pneumonia. Generally speaking, though, leucocytosis in pneumonia may be thought of as an indication for the administration of sulfathiazole or sulfadiazine. If there is doubt, perhaps the best thing to do is to give it. After about two days, the attendant in a case of virus pneumonia is convinced that it is not doing any good.

At the time Englehardt and Wilen submitted their paper for publication, August 8, 1942, six cases of virus pneumonia had been autopsied and reported. The general pathological characteristics are essentially similar to the pneumonias occurring in other virus diseases, such as influenza, measles, psittacosis, and variola, before secondary infection supervenes. The tracheo-bronchial tree is congested. The lungs show moderate congestion and edema, with confluent areas of firm granular consolidation. Microscopically, there is a predominance of mononuclear cells, along with fibrin and red blood cells filling the bronchi and alveoli. Polymorphonuclear cells are scarce, as also are cocci. Arterial necrosis has been observed.

To summarize the impressions of virus pneu-

monia, it is like influenza but the onset is too slow. The patient is becoming sicker when he should be getting better. And yet, in many cases he is sicker on paper than he is in bed. He is a patient with pneumonia who looks as if he should get well. Physical signs are vague. They more often lag behind the x-ray evidence than otherwise. They not only appear late but they persist long. It is odd to see the leucocyte count rising when ordinarily it would be falling. The pleura rarely gives concern. If the diagnosis has been made with confidence there is comfort, even in the face of a relapse, in the knowledge of the low mortality. The question that must occur to everyone is this: Will secondary invaders continue to neglect this soil, and, in the event of invasion, will the sulfonamids be our allies in the fight?

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St. Luke's Hospital.

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ALCOHOL ABUSE
A PUBLIC HEALTH PROBLEM*

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Society has often lagged behind science both in the collective voluntary use of many available practical facts, well established and published in professional journals, and in the application of new knowledge to the formulation of policies useful only or best through sanctions made effective by civil government representative of majority opinion. We have long known more than we have put to use.

In few respects has the belated adoption of Science's contributions been more evident than in the long delay on the part of the laity, and in some respects of the physicians of the past half century, in accepting, and acting with consistent Social purpose upon the revolutionary contributions of medicine to the ascertained facts concerning the action of alcohol on man.

Let me use for illustration several episodes in the history of medicine, each marking a forward step in knowledge and no one or all of them accepted in the social or political sense as a basis for public policies or action.

In 1883 Prof. Oswald Schmiedeberg, of Strassbourg in Germany, father of the scientific use of medicaments, observed in the course of pharmacological studies of narcotic drugs that alcohol failed to meet the definition of a stimulant but under all conditions acted as a depressant, i.e., caused inferiority of performance. Wherever modern medicine is taught today, the facts first described and proved by the methods of experimental pharmacology, a new science in 1883, are so taught in this country and abroad that the use of alcohol to stimulate circulation, respiration, muscular action or the processes of digestion is no longer prescribed in our leading hospitals or by competent and informed physicians. Where used, it is to dull the mind and senses and lower the level of anxiety.

And yet society and its average man and woman assume the effects of alcohol to be stimulating, act accordingly, and suffer not only from lack of understanding but from the assumption that the alcohol user is a safe and responsible judge of whether his performance of body or mind is better with than without alcohol in the body.

In the same year, 1883, Prof. Emil Kraepelin, at Stuttgart, stated from his experience with patients brought to him as a psychiatrist that the various somatic or bodily manifestations of alcohol were due mainly, if not solely and exclusively, to the toxic and depressant effect of ingested alcohol upon the central nervous system, the brain and spinal cord. And yet today in a public way alcohol is extolled as an upbuilder of physical strength, of prowess in the arts, as a factor in the well-being of young and old, worker and playboy, and as a means of attaining and holding enviable social, public and commercial positions.

In 1903 Professor W. O. Atwater, of Wesleyan University, a physiologist with special interest in the caloric values of foodstuffs and in their disposition and use in the human body, observed that while alcohol was oxidized in the body the process of burning or production of energy did not follow the rules as observed for the meat, starch and fat elements of a usual diet, in that alcohol was not capable of storage in the body, but was burned at a constant rate until all was consumed, regardless of the need of the body at the time, or even in spite of the absence of any bodily demand for increased energy or heat production. Alcohol tends to lower the temperature of a person exposed to cold and raises the temperature of a person exposed to heat.

From Atwater's work and that of subsequent students of the metabolism of alcohol in the human body, it has become clear that while up to about one-sixth of the body's caloric needs can, in the absence of other source, be met by alcohol in the diet of men engaged in physical labor, as in agriculture, alcohol cannot be accepted as a food, because of its uncontrollable oxidation, its inacceptability by the body as a stored source of energy, its toxic effects, and the fact that, in the processes of growth, nutrition and repair of the body, the molecule of alcohol cannot

*Presented by invitation at Founder's Day Exercises of the Medical College of Virginia in Richmond, December 2, 1942.

be incorporated into the substance of any normal body tissues. And yet alcohol is used in place of foods, as if a safe source of body energy and under countless conditions as if an appropriate addition to the dietaries of old and young.

In 1918 there appeared from the Carnegie Institution in Washington the classical monograph by Dodge and Benedict on the Psychological Effects of Alcohol, presenting for the first time, and as the result of most meticulously controlled and objectively recorded tests, the effects of small doses of alcohol upon those reactions of the nerve and muscle mechanisms of our body which we speak of as reflex actions. These are automatic responses of the body such as we are endowed with or develop intentionally primarily to safeguard ourselves against a variety of threats of damage in our environment.

The substance of the lessons learned from some years of these intensive studies at the Nutrition Laboratory of the Carnegie Institution in Boston was that the use of these small amounts of alcohol by healthy persons, whether or not accustomed to the use of alcohol in beverage form, resulted in a delay in reaction times by from 5 to 10 per cent. The full significance of this modest fact was not perhaps generally recognized in the medical sciences until in 1924 another monographic publication from the Carnegie Institution appeared under the authorship of the experimental psychologist Prof. Walter L. Miles, now of Yale University, with the title of "Alcohol and Human Efficiency". Miles made his tests on persons of various ages and qualifications, using alcohol in doses comparable to the beer of 2.75 per cent alcohol content legislatively declared by our Congress to be non-intoxicating.

The substance of Miles' observations was similar to that of Benedict and Dodge but of a wider range. It appeared that not only in regard to reflex actions, but in mental processes involving attention, memory, discrimination and judgment, "non-intoxicating" doses of alcohol produced recognizable and measurable inferiority of human performance both physical and mental.

Is it not fair to say that society and government have so far failed to make known these several fundamental observations upon the effects of a widely used dietary drug in our country, in a way to make men, women and their children generally aware of the significance of these facts upon the conduct of their lives and upon the policies of civil government, and particularly of those branches of local, state and national government especially charged with educating the people and protecting their health?

Up to this point I have referred only to the effects of alcohol when used in so-called "non-intoxicating" doses, i.e., in amounts which when taken by the average healthy well-developed, well-nourished and nervously well-balanced adult human do not ordinarily produce obvious or socially significant interference with conduct or with the usual avocations of life.

This is not the time or place to remind you of the social, economic, medical and occupational hazards that follow commonly the abuse of alcohol in the ordinary sense of development of acute or chronic intoxication.

Let me, however, recall to you the fact that such abuse of alcohol causes an amount of acute and chronic illness directly and exclusively related to alcohol taken in excessive quantities or high concentrations, which costs more to our respective local and state governments for treatment of the sick with humane medical resources than is received by our Federal government in taxes upon the production and sale of alcoholic beverages.

Not only is this mass of sickness of great volume, but the deaths officially accepted as due to ethyl alcohol used as a beverage amount to more than all the deaths in our country from typhoid, paratyphoid and undulant fever combined, or from scarlet fever and diphtheria together, or from malaria, smallpox and poliomyelitis combined, being 1.9 per 100,000 for the U.S.A. as a whole in 1940, with rates ranging from 0.7 in Kansas and 0.8 in Arkansas to 19.0 in Nevada, with Washington State 4.2, Massachusetts 4.1, Washington, D.C. 3.9, Arizona 3.8, New York 3.1 and Virginia 3.0 among the highest. Furthermore, let me remind you that for every death recorded as due directly or primarily to the abuse of alcohol, there is another death equally attributable to alcohol but concealed under the certification of a cause of death more acceptable to the family and friends, and more consistent with the social, church or public position held by the deceased. The death-rate from alcoholism, acute and chronic, is an understatement of the loss of life from alcohol as the sole or a major contributing factor.

The title of my talk assumes that beverage alcohol is abused, and I submit that this is a reasonable

assumption whether we refer only to those whose use results in lowered resistance to infection, to severe deprivations of a nutritional character, to acute intoxication requiring emergency and relatively short but repeated medical care, or to that 10 per cent of all admissions to hospitals for mental disease who have become chronically ill and unable to share in the privileges or opportunities of free members of society. I am inclined to go further and say that there is alcohol abuse when people allow themselves an inferiority of performance and ability to work, or of lowered capacity for responsibility at times like these, from the consumption of alcohol which does not reveal itself in overt acts offensive to public order or private customs of life, but which renders them less efficient whether driving a car or an aeroplane, working at a lathe or adding machine, or directing the work or discipline of others. Such abuse is not that of the drunkard, or of the acute or chronic alcoholic, but by the men or women who drink as they believe in moderation but sufficiently to lower their level of performance below what they are capable of at their best.

Is this a problem for public health? Public health services consist of the application of the sciences and arts of preventive medicine through government for social ends. Any factor of a preventable nature which affects many individuals of a population, and is susceptible of correction by education and by public or social action at the taxpayers' expense to reduce sickness and postpone the event of death, is a public health problem.

Alcohol abuse contributes heavily to the acquisition of syphilis and gonorrhea through extra-marital relationships, and, with prostitution, constitutes a pair of factors more seriously menacing the integrity of our war effort of men and women in uniform and in industry than any other factor related to communicable and preventable disease.

That alcohol use and abuse have been recognized as a problem of the public health is apparent from the record of the Massachusetts State Board of Health and of the Department of Health of the City of New York.

I quote the following from the official *Weekly Bulletin* of the Department of Health of the City of New York of February 19, 1916:

In the Act of 1869 by which the State Board of Health of Massachusetts was established, the Board was specificially directed:

"To examine into the effect of the use of intoxicating liquor as a beverage, on the industry, prosperity, happiness, health, and lives of the citizens of the State; and also, what additional legislation, if any, is necessary in the premises.

"On June 29, 1915, at the request of Dr. Goldwater, then the Commissioner of Health, a committee of leading physicians, actuaries, educators, publicists, and others interested in the alcohol question, met to advise with the officers of the health department as to the most effective method of preventing such disease as alcohol causes or to which it contributes.

"The opinions expressed by the committee and the information in the hands of the department of health, as to the part played by alcohol in causing sickness and death, justified the entrance of the Department of Health into a field previously occupied chiefly by moralists rather than physicians.

"Just as the control of venereal disease is a technical matter rather than a question of individual or community morals, so the knowledge of the serious effects of the use of alcohol is to be spread by education. As a measure of personal health and public preparedness against preventable disease and disability, this question should be approached from the medical and social point of view and not from that of morality and religion.

"Admitting that the drunkard is a social misfit, our interest is rather with those users of alcohol who do not become irresponsible or guilty of antisocial acts. Such individuals are almost always ignorant of the fact that alcohol decreases resistance to infectious diseases, such as tuberculosis and pneumonia. Alcohol is a depressant and not a stimulant; it drugs the brain and drops the capacity of the nervous system to obey the will. In this way the use of alcohol becomes an important factor in industrial accidents. Entirely aside from its action as a contributory cause in infectious diseases and industrial accidents, the intemperate or continued use of alcohol causes well recognized degenerative diseases.

"The Department of Health has no sympathy with and will take no part in legislative or police restrictions or attempts to limit personal liberty in the use of alcoholic beverages. The spread of accurate information among the people as to the effects of alcohol can be depended upon to accomplish more than laws restricting its manufacture or sale.

"In the long run, compulsory prohibition will not prohibit until the public is ready to cease using alcohol, at which time restrictive laws will be superfluous."

In view of the events of the past twenty years in the United States there is something almost prophetic in this official statement of twenty-six years ago.

At the Washington meeting of the American Public Health Association in 1917 and at the Cincinnati meeting in 1926 I ventured to present what I believed to be some of the reasons why the beverage use of alcohol should be considered a major problem of public health. In this opinion I had the sup-

port of that great educator, President Eliot of Harvard, and such health authorities as Sir Arthur Newsholme and Sir George Newman of England, the chief medical officers of the Board of Education and of the University of Health. For these and other perhaps more compelling reasons of evidence and conviction I take this present opportunity to emphasize the importance of a rational scientific attitude toward the use of alcoholic drinks which I believe should be formulated and expressed by the official health agencies of this country. This appears to me of particular importance at this time, now that we have returned to practically unlimited accessibility of alcohol of all strengths to all persons willing and with the money to buy. May I further emphasize the advisability of having any attitude or formulation of public policy, or efforts to educate the general public, in the actual and potential dangers of beverage alcohol, established by public and official rather than by volunteer or private health agencies.

It is not that I would draw a distinction between the Women's Christian Temperance Union or the Anti-Saloon League and the educational obligations of health departments, but rather to call your attention to the non-performance, the paralysis of interest, the consistent and well sustained aphasia of every unofficial national health agency on the subject of alcohol from the date of passage of the Eighteenth Amendment. The public of the United States cannot trust its nonofficial health agencies to guide them in the implications of alcohol as a cause of preventable disease and death in the face of powerful commercial selfishness, or when a particular health topic runs counter to the advertising interests of the public press.

It must be recalled that no one of the always influential and usually generously supported volunteer agencies composing the National Health Council has uttered a word of warning, contributed any substantial information or advice as to health implications of alcohol use, or published a report of new facts and observations of a scientific nature on the subject of beverage alcohol or its effect on human life, since 1920.

Plainly, if and when conviction that alcohol constitutes a health hazard, more directly under man's own control to prevent than any other of equal significance, and determination to describe its effects in terms of sickness and death are arrived at among professional health workers, it must be to public health officers supported by the taxpayers, not to the private agencies sensitive to the wishes of a subscribing clientele that we must look for initiative and courage.

What Schmiedeberg and Kraeplin taught in 1883, what Cushny and Bastedo have written and described since 1900, what Benedict, Dodge and Miles have disclosed with exquisite experimental exactness will be found accurately written in Emil Bogen's school book for the Department of Education of Los Angeles, What About Alcohol. It were a pity that in this respect the public's physician, the health officer who speaks from the highest pulpit of health publicity, should act as if less well informed than the school child.

I believe there can be no better time than the present, when the very life of our nation is threatened by armed aggression to be overcome, we believe, by forces superior in quantity and quality, to make known to all people that the use of alcohol to any extent that causes inferiority of performance, of will power, of judgment, is not only unintelligent and harmful to the national effort, but an evidence of ignorance. To be afraid of ignorance is, I think, the only fear worthy of free men.

It is my belief that the evidences of the harmful effects of alcohol upon the individual and society are sufficiently abundant and precise to warrant the insistence by any community, whether local or state, that their department and officer of public health present the facts to the public through all suitable channels, and make available for public consideration and action all reliable information as to the preventable character of alcoholism, its wastefulness of life and material resources.

I venture to claim that no competent body of physicians in this or any other state of the Union can offer convincing evidence that beverage alcohol is essential for healthy persons at any age, or that its use by such persons improves the level of their health or prevents disease.

I ask you to accept my thesis that alcohol as used, and wherever abused, has created a problem properly included in a modern program of public health protection in our day and generation. Neither the private nor the public practitioners of preventive medicine can escape responsibility for initiative and

courageous leadership in this matter.

There have been instances of public health leadership as that referred to in New York City and by the late Dr. George Parrish in the Los Angeles City Department of Health, by the Alcohol Control Board of New York State, by the Assembly of the Commonwealth of Virginia, by the Liquor Control Board of Great Britain, and by the State Department of Education of Florida. There are six teachers' training institutions which offer courses in alcohol education.

In spite of the fact that alcoholic beverages are and may be used by some adults with well developed and well nourished bodies and stable nervous systems, under such conditions of time and circumstance, the amount and strength that direct acute and chronic disturbance of health is not generally recognized, all such users suffer at least temporary inferiority of mental and physical performance because of the toxic depressant properties of alcohol. Any evidence of assumed improvement in conduct or health as the result of beverage use of alcohol is but an expression of self-deception made possible by the lack of judgment and responsibility, characteristic of early results of the use of alcohol. Personally I believe there is so much more to be given to and taken out of life by a body and mind, by thought, action and emotions unaffected by any drugs, that I advise abstinence from alcohol, and believe its use should be discouraged by personal example and by an educated public opinion.

I understand that public action by your Governor and Legislature is under consideration for the purpose of providing humane skilled medical care for men and women so diseased by and addicted to the habitual use of alcohol as to need prolonged institutional hospital care. With such a purpose, all people of good will can feel in agreement and yet deplore its necessity.

We would never have reduced typhoid and diphtheria to the vanishing point if we had devoted ourselves chiefly or solely to hospital care of the sick.

Let me offer the quite unsolicited suggestion that for every dollar spent on medical care of those who have abused alcohol and their own health at least an equal sum be devoted to the widespread persistent and truthful teaching of the effects of alcoholic beverages upon health and human behavior by the appropriate state and local departments of health and of education.

600 West 168th Street.

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THERAPY OF MENINGITIS

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History.—Before the introduction of spinal punctures, medical treatment of all forms of meningitis was practically nil. Little was known of the various organisms and forms of meningitis and, as might be expected, the mortality was 100 per cent except for a rare case which chanced to make a spontaneous recovery.

About the beginning of the twentieth century, Quincke introduced the spinal puncture. This was the first step toward the treatment of meningitis and this formed the basis of all future therapy for the next forty years. Following the introduction of the spinal puncture, examination of the spinal fluid began and developed into our present knowledge of causative organisms and the reaction of the meninges when invaded by them. Antiserums were not developed until 1906, and in 1907 the first extensive use of antisera began. Following this, the therapy of meningitis developed into a regime of repeated spinal punctures with the administration of antiserum into the meningeal spaces in order to bring the serum into direct contact with the organisms. The frequency of spinal puncture and giving of serum varied from once every six hours to once a day or less often. The more ambitious the physician and the more time he had to devote to the patient, the more serum that could be provided, the more often were spinal punctures done and serum administered. During the thirty-five years following antiserum use, mortality rates fell notably but still ranged from 50 to 95 per cent, even with the best treatment as accepted then and an ample supply of antiserum. Various reasons were advanced for failure of better response. In general, the impression was one of a time consuming, expensive procedure, the results of which were uncertain and unsatisfactory. For meningitis caused by organisms other than the meningococcus the mortality was still 100 per cent and treatment limited to a diagnostic spinal puncture.

The second great step forward toward more successful and rational therapy began in 1933 when Hayne made the first clinical trial of the antitoxin developed by Ferry, one year previously, from the meningococcus. Prior to this, for ten or eleven years, serum had at times been administered intravenously, usually when for one reason or another intraspinal administration could not or was not carried out. Intravenous administration was done more as a therapeutic gesture than with the idea of real benefit being obtained from it. Gradually the general impression was created that those patients who received intravenous therapy did better than those who did not. At the time this was realized antitoxin was developed. Such an easy method of administration as compared with intraspinal administration caused an early inclination to use this method more but physicians still clung more or less to intraspinal treatment until about 1935 and 1936. At that time, it began to be definitely accepted that intravenous therapy was superior to intraspinal therapy, that the mortality was less, that end results in patients who did recover were better, and that therapy was more easily carried out. It was not, however, accepted to the extent that all physicians gave up intraspinal therapy except in some of the more advanced clinics. Indeed, it has not yet been accepted by half, if not the majority, of physicians to the extent that they are willing to discontinue intraspinal therapy. Both antitoxin and antiserum are being used more and more intravenously, one giving about as good results as the other.

In the past seven years, chemotherapy has been developed until at the present time it largely replaces the use of serums and antitoxins. Only in the last two years, however, has the intravenous use of soluble forms of the sulfonamide drugs begun to be used. Even now, they are used only when the patient is moribund and cannot take drugs orally. These drugs are not only active against meningococci but against many other kinds of meningitis as well. The present status of the therapy of meningitis is uncertain but seems to be revolving about the question of chemotherapy and method of administration. In my own mind there is no doubt about which procedure is best. Three cases are now presented:

Case 1. Bobby C., age 3, admitted to Lynchburg General Hospital 11-23-41. Present illness began about one week before when patient had a severe cold with fever. Was seen by L.M.D. who

prescribed some "white tablets" which lasted two days. Child seemed to do better while taking the tablets but after several days became worse. Three days ago became drowsy, patient complained when moved and acted as if neck hurt when his head was moved. He was then seen by another doctor who put the patient back on the tablets and sent him to the hospital.

Past and family history negative.

Physical examination showed a well nourished and developed negro male, acutely ill. All findings negative except as follows: child was definitely drowsy but irritable when disturbed or aroused. The neck was not stiff but acute flexion caused the child to cry out. Kernig caused some complaint but was not definitely positive. Reflexes present and normal. There was a right otitis media and nasal discharge.

Course in hospital: Due to lack of definite findings, meningitis was suspected but spinal puncture postponed for a few hours. Right ear opened and thick pus flowed out. Sulfathiazole was started orally. The following morning, findings were more definite and spinal puncture showed cloudy fluid containing influenza bacilli. Sulfathiazole was changed to sulfapyridine. Child admitted on 11-23-41 and on 11-25-41 administration of influenza serum was begun intraspinally and intravenously. Serum was given intraspinally on 11-27-41 and 12-2-41, but no further intravenous therapy was given. There was a temporary improvement after the first administration but following this the spinal fluid became very thick, stupor increased and patient gradually became worse. Cisternal puncture on 12-16-41 showed spinal fluid too thick to flow but two cc. were aspirated. Died 12-19-41.

Comment. This patient presented the usual course of influenzal meningitis: inadequate serum therapy was due to difficulty in obtaining serum and to the cost. A terminal outcome in nearly all cases is to be expected. It is notable that improvement followed the single intravenous serum administration.

Case 2. Velma N., age 2 months, admitted to Lynchburg General Hospital, 12-4-41, with complaint of fretfulness, diarrhea, and fever. On physical examination no definite diagnosis could be made. Dysentery was suspected because of the history. Patient was therefore put on sulfaguanidine and routine dysentery treatment. Temperature remained elevated and child failed to improve. Re-examination on 12-5-41 showed slight stiffness of the neck which led to the suspicion of meningitis. Pneumonia was also suspected because of respiration. Sulfaguanidine was therefore discontinued and sulfathiazole begun. Re-examination on 12-6-41 showed marked stiffness of the neck. Spinal puncture showed purulent fluid loaded with pneumococci. Because of the ability to obtain higher concentrations of sulfapyridine than sulfathiazole in spinal fluid, sulfapyridine was begun orally. Child became rapidly worse and died 12-7-41 (24 hours after beginning sulfapyridine).

Comment. This child was a difficult problem. A very small, chunky infant who had been seen in the clinic many times, always held her neck more or less stiff so that diagnosis of increasing stiffness was unusually difficult. Consequently, there was some delay in doing a spinal puncture. Even so, the course was unusually short and, indeed, the child died very suddenly and unexpectedly.

No intravenous medication was attempted and probably could not have been accomplished without cutting down on a vein.

Case 3. Herbert W., age 11 years. Onset of present illness was two days before admission, with cold, sore throat and left earache. Few hours before admission he became unconscious and was in this condition when sent to the Lynchburg Hospital.

Patient admitted on 12-5-41, unconscious, jerking about and difficult to control, temperature 104. On physical examination, diagnosis of meningitis and left otitis media was made. Left ear opened. Spinal puncture showed cloudy fluid containing streptococci. Intravenous administration of sodium sulfapyridine was begun at once together with sedatives and infusions. Sulfapyridine was administered every twelve hours for five doses, and at the end of that time child was rational and taking oral medication and nourishment well. Complete recovery was uneventful and he was discharged on 12-21-41.

Comment. This is at least one patient who formerly would certainly have died. The fact that this patient could be given no oral medication forced the administration intravenously. Only two spinal punctures were done—the first diagnostic, the second to follow response.

SUMMARY

A brief history of the therapy of meningitis has been outlined. Three cases, each of a different type

of meningitis, have been presented, each having predominantly a different method of treatment.

COMMENT

It is believed that further improvement in the treatment of the various forms of meningitis lies in administering large amounts of medication intravenously and that dependence upon oral therapy should no longer be accepted. While it is nice to be able to follow blood concentration of various drugs, it is not necessary nor reasonable in all cases such as small infants or where facilities for determinations are not available. Meningitis ordinarily responds rapidly to treatment if response is going to occur, and this should serve as the principal guide to therapy.

1512 Clinton Street.

Doctors' Households Urged to Set An Example in Waste Fat Salvage.

The importance of saving waste household fats in order to salvage their glycerine content should be apparent to every physician. The doctor's kitchen, like that of every other family in town, can supply at least a tablespoonful of fat a day—from meat drippings, from rendered trimmings or fat skimmed from the soup kettle and no longer good for food. If that much were retrieved in every household and taken to the meat stores which collect the fat for the renderers, the amount saved would exceed the national goal of 200,000,000 pounds for 1943.

Why must we go to this trouble, in a land where more than a billion pounds of fat used to be wasted every year down the kitchen drain or into the garbage can? Because glycerin is desperately needed to feed the United Nations war machine, and because many of America's outside sources of fats and oils have been cut off by the war.

Glycerine is indispensable in the manufacture of munitions, because it is the source of both nitroglycerin and dynamite, the first of which provides the explosives for propellants, and the second the means of military demolition. Tanks, ships and planes last longer because of paints containing glycerine. It is used as an anti-icing fluid for the propellors of fighter and bomber planes. The shock absorbers of jeeps and halftracks, the recoil mechanisms of big guns and the firing mechanisms of depth bombs all contain glycerin.

Glycerin has an important place on the medical front, too, in both war and peace. It is one of the best known and widely used medical materials. There is scarcely a branch of therapeutics in which glycerin does not play a part. An average of more than three pounds of glycerine per hospital bed per year is used in our American hospitals. And an analysis of 15,063 prescriptions made prior to the war in a single American city showed that, with the sole exception of water, glycerine was the most-used liquid ingredient.

In military medicine the role of glycerine continues to grow. Even before we entered the war, large quantities of glycerine were shipped by the American Red Cross to England. In the requests made to organized medical groups in the United States for medical supplies, British authorities rated glycerine as equal in importance to surgical instruments.

Practically all the liquid sulfonamides call for glycerine. The war has given increased emphasis also to the long-established value of glycerine itself in burn therapy and surgical treatment, as well as for wound dressings. Dressings can be changed with less discomfort to the patient when they are soaked with glycerine.

The War Production Board is urging all Americans everywhere to help save the fat from which this precious liquid is made. The meat dealer from whom you purchase food will be glad to pay the prevailing rate for the kitchen fats YOUR household conserves. The pennies will buy War Stamps—and every pound of waste cooking fats turned in will provide enough glycerine to make a half-pound of dynamite or four 37-mm. anti-aircraft shells, or their equivalents in other badly-needed materials. Doctors, set an example in your community: start YOUR household saving waste kitchen fat today!

PELVIC APPENDICITIS*

LEROY SMITH, M.D.,
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The incidence of four cases of acute pelvic appendicitis during two weeks is unusual. Yet this happened at St. Elizabeth's Hospital during the first two weeks of February. As the symptoms and physical findings of such cases are quite different from the usual type of appendicitis, the correct diagnosis may be overlooked and may be confused with so-called intestinal grippe, stone in the lower ureter, ruptured ovarian follicle, or a lesion in the female pelvis. In pelvic appendicitis there is a frequent tendency to early rupture and to rapid spread of peritonitis. It is for this reason that these four cases which have occurred in such a short time may be of special interest as to diagnosis. Two of these cases were operated upon by Dr. J. Shelton Horsley and two by me.

The term pelvic appendicitis is applied to those inflamed appendices found wholly or in part below the brim of the pelvis. The symptoms are rarely those so frequently associated with abdominal appendiceal inflammation. The patient's first symptom is that of almost constant pain which has its origin in the epigastrium or above the umbilicus. In a few hours the pain usually radiates to the lower abdomen and here it may be localized in either quadrant or in the midline. In a larger series of reported cases the pain is often on the left side or just above the pubic region. Vomiting and diarrhea may or may not occur. Upon questioning the patient, however, there is usually found one symptom not associated with the more common types of appendiceal pathology. This is frequency of urination or in some cases the desire to defecate. The physical findings are most unusual, and while the history makes a diagnosis of appendicitis seem possible, on examination a more conflicting picture is presented. The abdomen is generally relaxed unless there is a definite peritonitis. Upon moderate pressure usually no tenderness can be noted except a generalized lower abdominal soreness. There is no localization of pain or rebound tenderness. Rectal examination is all important and it is here we find tenderness on pressure over the cul-de-sac in the midline or right side, and often a definite tender mass can be palpated. Repeated rectal examinations are frequently necessary to establish an early diagnosis of this disease. When the appendix ruptures, there is a sudden change in the clinical picture, with peritonitis, spasm and tenderness over the entire lower abdomen. As a usual rule, the temperature is found to be normal or elevated possibly one degree. The laboratory findings reveal in most cases a white blood count from 10,000 to 20,000 with an increase in the poly. count, usually between 80 and 90 per cent.

Generally there are two outstanding diseases to be considered before definitely making a diagnosis. (1) In a rupture of an ovarian follicle, there may be symptoms in the lower abdomen, but on examination the ovary on that side usually reveals marked tenderness. If an elevation of the white blood count occurs, it is usually later. (2) A few cases of stones in the lower ureter may simulate this condition, but the urine often shows red blood cells and on rectal examination no masses or points of tenderness can be felt.

The following four cases of pelvic appendicitis have recently occurred on the surgical service at St. Elizabeth's Hospital:

Case 1. Miss R. N. J., age 19, was admitted to St. Elizabeth's Hospital on February 9, 1943. She gave a history of severe cramp-like pain in the epigastrium twenty-four hours prior to admission. It was almost continuous for the first twelve hours, then the pain subsided. She vomited. The pain radiated into the lower abdomen. Ten hours before admission she began menstruating and the pain became worse. There was no history of previous irregularity of the menstrual periods. Since the onset of symptoms, there was a desire to defecate although the bowels moved only once. Examination at the time of admission revealed the abdomen to be slightly tender in both lower quadrants, more marked in the midline. There was a slight increase in spasm over the right iliac crest, but no evidence of tenderness was noted in this region. No masses were felt. Pelvic examination showed the uterus to be infantile and slightly tender with no masses in

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*Presented at the Staff Meeting of St. Elizabeth's Hospital, February 22, 1943.

the left fornix, though in the cul-de-sac there was a small tender, fixed mass. On rectal examination this was extremely tender, but there was no fluctuation. The laboratory examinations showed urinalysis negative; white cell count 19,100, polys. 88 per cent. She was operated upon by me through a McBurney incision. The cecum was found well over the pelvic brim. The appendix was located in the cul-de-sac. The omentum was extensively adherent around the outer half. This was gently freed and the appendix was delivered into the wound. It was moderately enlarged with purulent exudate covering the entire distal two-thirds. There was no evidence of perforation. The appendix was removed and 8 grams of sulfanilamide powder was sprinkled into the abdominal cavity and the wound closed. Her convalescence was entirely satisfactory. The highest temperature was 100.8; this was on the second postoperative day. The temperature gradually returned to normal. The patient was discharged on the tenth day with the wound healed.

Case 2. Mr. R. C. S., age 16, was admitted to the hospital on February 3, 1943. He gave a history of having had cramp-like pain in the epigastrium which began thirty-six hours before admission. Several hours after the onset the pain began to radiate to the lower abdomen and became more marked in the right lower quadrant near the midline. He vomited twice twelve hours before admission and had two soft stools. The pain became worse. The temperature on admission was 100, pulse 100, respirations 20. There was spasm with tenderness over the entire right lower quadrant, more marked toward the midline. There was slight spasm with rebound tenderness in the left side. No masses were palpated. Rectal examination showed a fairly well localized mass on the right side which was slightly fluctuant and very tender. Urinalysis was negative; the white cell count 11,700, with 88 per cent polys. He was operated upon by Dr. Horsley through a McBurney incision. The parietal peritoneum was greatly congested. There was a considerable amount of rather thick pus in the peritoneal cavity. It was unconfined. There was spreading peritonitis. The appendix was adherent in the pelvis. The adhesions were separated with the finger and the appendix was brought into the wound. It was 10 cm. in length and the distal third of it was gangrenous. The appendix was removed and drains were placed in the pelvis and to the base of the cecum. Five grams of sulfanilamide was placed in the abdomen and the peritoneum was loosely closed about the drains. The abdominal wound was packed with vaseline gauze. The patient made a very satisfactory convalescence except the white blood count dropped to 2,800 three days after the operation. He was given a blood transfusion and put on liver and iron therapy, and six days later the w.b.c. count was 13,800 with 81 per cent polys. A small abscess formed nine days after the drains were removed and his temperature reached 101.8. On inserting a small tube in the sinus there was some purulent discharge and the temperature reached normal in two days. He was discharged from the hospital thirty-two days after operation with the wound almost healed.

Case 3. G. A., boy, age 5, entered the hospital on February 6, 1943. The patient over a two-year period had repeated attacks of "colic-like" pain in the abdomen lasting for two to six hours. These were associated with nausea and occasionally vomiting. Following one of these he was admitted to the hospital with a diagnosis of possible appendicitis. The patient was free of all pain and very comfortable. Temperature was 100.4, pulse 108, respirations 26. The abdomen was soft and without spasm or tenderness. Rectal examination showed slight tenderness on the right side but no definite mass could be felt. There were 14,900 w.b.c. with 50 per cent polys.

Because of the lack of physical findings in the abdomen the patient was treated conservatively and in eight hours all rectal symptoms had disappeared. The temperature was normal and w.b.c. count was 7,200 with 46 per cent polys.

On the fourth day, the patient had another attack with pain limited to the lower abdomen. There was very slight tenderness in the right lower quadrant. Rectal examination showed definite tenderness on the right side, but no mass could be felt. The w.b.c. count was 10,800 with 63 per cent polys.

The appendix was exposed through a McBurney incision by Dr. Horsley. The distal half was in the pelvis and acutely inflamed. The appendix was removed and the wound was closed. His convalescence was uneventful and he was discharged without further symptoms on the twelfth day.

Case 4. Mrs. C. F. J., age 39, was admitted to the hospital on February 11, 1943. She gave a history of extreme epigastric pain with nausea and vom-

iting of sixteen hours' duration. She had just finished menstruating before the pain started. Throughout the course of her symptoms there was a marked desire to void frequently. About two hours before admission the pain became worse in the lower abdomen. The bowels had moved once since the onset of symptoms. The abdomen was remarkably free from spasm. However, there was slight tenderness in both lower quadrants, more toward the midline. No masses were palpated. On vaginal examination the uterus was in normal position with slight enlargement and tenderness. The right and left fornices were negative, but in the cul-de-sac there could be felt a definite mass the size of a walnut which was excruciatingly tender. The temperature on admission was 98, pulse 90, respirations 20. The laboratory findings showed a faint trace of albumin in the urine, positive acetone, w.b.c. 16,800, polys. 84 per cent. The patient was operated upon by me through a right rectus incision and the appendix was found in the pelvis almost encircled by omentum and adherent to the lower posterior wall of the uterus. There was no evidence of perforation, although the appendix was acutely inflamed and there was exudate on the serosa. The appendix was removed and 8 grams of sulfanilamide powder was placed in the pelvis and abdominal wound. The wound was closed without drainage. The patient made a satisfactory convalescence.

CONCLUSION

In cases of pelvic appendicitis the symptoms are often unlike those of the usual cases of appendicitis, and it is only through careful evaluation of abdominal examination, rectal examination, laboratory findings, and clinical history that a correct diagnosis can be made.

Medical Society Formed to Exchange Information With Soviet Union.

The American-Soviet Medical Society has been founded to meet an increasing demand for information about the results and achievements of Soviet medicine. Reports have reached this country of spectacular feats of surgery wrought by the Soviet medical corps all along the far-flung battle line, from Leningrad to the Caucasus. These contributions to medicine are the result of twenty-five years of untiring effort, during which the Soviet Union has built up an impressive system of public health and medicine. In hundreds of scientific research institutions behind the battle line, thousands of physicians and scientists are engaged in investigations. Yet the results are little known in this country, primarily because until now there has been no organization prepared to exchange medical information although the language in many cases has proved an almost insurmountable barrier. The American-Soviet Medical Society will fill this gap.

Through meetings, the publication of a journal, and the establishment of a library of information, the Society will tell physicians of America and members of the allied professions on what problems our Soviet colleagues are working and what steps they are taking to solve them. On the other hand, the Society will send American medical books and periodicals to the Soviet Union in order to keep the Russians informed of scientific developments in this country and to stimulate closer cooperation between the medical corps of the two countries. After the war, as soon as conditions permit, the Society hopes to promote the exchange of students and scientists and to sponsor study tours in the two countries.

The president of the Society is Dr. Walter B. Cannon, professor emeritus of physiology at Harvard University, member of the National Academy of Sciences of the United States and of the Academy of Sciences of the U.S.S.R.

Dr. Henry E. Sigerist, director of the Institute of the History of Medicine, Johns Hopkins University, is the editor of the journal which will be known as the *American Review of Soviet Medicine.*

The temporary offices of the Society are at 130 West 46 Street, New York City.

PLANIGRAPHY X-RAY TECHNIC

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INTRODUCTION

A new phase in the art of roentgenology is known as body section radiography or "Planigraphy".

The usual x-ray technic has always been limited in radiographing certain parts of the body because of obscuring shadows cast by heavy structures lying over or under the part to be shown on the film.

This is true in persons who have had some form of surgical collapse of a lung when the purpose is to demonstrate whether or not a cavity still exists in the compressed lung tissue. Frequently the routine stereo and flat Bucky films do not show these residual cavities even though the sputum remains positive for tubercle bacilli. Occasionally in uncollapsed lungs planigraphic films will reveal a cavity which the usual methods had not shown.

Likewise, in x-raying the lateral upper dorsal spine, this technic is valuable, as the shoulders above and below the spine are "blurred out" and do not show on the film. In other parts of the body and the head it is of value in locating pathology or foreign bodies.

In this new technic called planigraphy, any one plane section of the body can be selectively radiographed and all superimposed shadows "blurred out". This is as effective as cutting a slice through the patient and x-raying the slice, without damage to the patient.

HISTORICAL

Planigraphy was done originally in France by Bocage in 1921, and by Portes and Chause in 1922, but was discontinued for some time until revived by Vallebona and others about 1935.

Prior to 1934 an American technician, Jean Kieffer,[1] had perfected and patented an apparatus which he called "The Laminagraph". Dr. Sherwood Moore[1] collaborated with Kieffer in this pioneer work.

In 1936, Dr. J. R. Andrews[2] presented a review of body section radiography and described the new planigraphy technic.

In 1937, the Siemens "Planigraph" was placed on the market and has had extensive use, although designed for upright planigraphy and vertical motion.

Subsequently the demand for a moderately priced attachment to convert existing tubestands and Bucky tables into an efficient planigraphic device has recently been met.

This development in x-ray technic opens a new and unlimited field to radiologists, and is of great value to clinicians in making a definitive diagnosis or localizing pathology or foreign bodies deep in the body. In fact, an x-ray laboratory is not complete without facilities for making planigraphic films.

DESCRIPTIVE TERMS

Several terms have been employed in describing body section radiography as follows: Planigraphy, using the Planigraph; Tomography, using the Tomograph; Laminagraphy, using the Laminagraph; and Stratagraphy, using the Stratagraph.

Of these, "Planigraphy" is the usual term to describe body section radiography.

PRINCIPLES OF PLANIGRAPHY

Planigraphy allows the selective radiography of plane sections within the body. By making use of the "motion blurring" of all structures lying either above or below the plane, exactly on a level with the fulcrum of motion, shadows of overlying or underlying structures are made to disappear, leaving only the required plane section in sharp detail.

For instance, to x-ray a collapsed lung following a thorocoplasty operation and demonstrate the presence of a cavity, however small, and its exact location by "blurring out" the shadows above and below it, is an example of this technic.

This is accomplished by moving the tube and the film in opposite directions throughout the exposure. The radiation will form an axis at a plane parallel to the table top between tube and film. The position of this axis plane is governed by the proportion of motion of tube to motion of film. Any structure in the plane of this axis will be radiographed in sharp detail while others lying outside this axis plane will be blurred out. The wider and

faster the excursion of the tube the thinner the plane projected in sharp detail on the film. The amplitude of motion should be great in planigraphy.

Equipment Requirements

The general equipment requirements for straight line (rectilinear) body section radiography are a rail mounted tubestand, a Bucky table, a means of propulsion, and some linkage mechanism so arranged that the Bucky will be moved in the opposite direction to the tubestand motion.

Two basic requirements to assure sharp detail in planigraphic films are: 1. All motion of the tube must be oppositely duplicated by the film with great precision. (The focal spot must travel along a straight line parallel to the film). 2. All vibration must be entirely eliminated.

The "rod-link" rectilinear type of machine is considered the best. A rigid rod connects the x-ray tube and the Bucky film carrier, and passes through a "fulcrum point" at an adjustable height above the table top. The position of the fulcrum determines the position of the body cut (planigraph) of a thin layer of body structure parallel to the film at the exact height of the fulcrum.

The "fulcrum jack" is fastened solidly to the rear edge of the Bucky table and is easily removable. The fulcrum is raised or lowered by means of a spiral screw which allows adjustment in fractions of a centimeter. A lock secures its position during motion, and it can be fixed at any height from 1 to 22 centimeters (.4 to 8.8 inches) above the table top on a graduated scale.

The driving mechanism is usually motor-driven, but some attachments are operated by handpower. The amplitude can be varied from 60 to 100 centimeters (24 to 40 inches), and by adjusting the exposure time, the effective amplitude can be adjusted over a wide range.

Sequence of Operation

When the tubestand begins its travel along the rail mount, the Bucky film carrier travels in the opposite direction, and "Bucky exposure" is made while tube is in motion. The entire exposure is made during the rectilinear motion and speed is so adjusted.

Exposure time can be varied from 2 to 8 seconds during a maximum amplitude. Shorter exposures can be made when less than 60 centimeter amplitude is permissible, but these are rare.

Planigraphic films are usually made at intervals of 1 centimeter through the part desired, a new film being placed in the casette for each exposure.

Conclusions

The writer's experience with a home-made hand-operated rod-link attachment for two years has convinced him that planigraphy x-ray technic is of distinct diagnostic advantage over the usual stereo or flat Bucky films in patients who have undergone surgical collapse of a lung.

It is also of value in locating cavities in uncollapsed lungs, and pathology or foreign bodies in other parts of the body and head.

The planigraphic method of definitive x-ray diagnosis should be more widely employed in all x-ray laboratories whether located in office buildings, general hospitals, or tuberculosis sanatoria.

When for any reason the motor-driven attachment cannot be obtained, a good mechanic can install a satisfactory hand-operated rod-link attachment at very moderate cost.

References

1. "The Laminagraph," by Jean Kieffer and Sherwood Moore, *Amer. Jour. Roentgenology and Radium Therapy,* April, 1938.
2. "Planigraphy—Introduction and History," by J. R. Andrews, *Amer. Jour. Roentgenology and Radium Therapy,* November, 1936.

602 Watt Street.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-seven year old white woman in her first pregnancy who apparently had adequate prenatal care from the first month of the pregnancy. No abnormalities were noted, although the patient was the short, stocky and stout body type. Labor began at term, and after ten hours of labor pains, the patient was delivered in the home by forceps under chloroform anesthesia, following prolapse of a non-pulsating cord. The fetal heart had been heard about two hours before the cord prolapsed. The child was stillborn. Following delivery there was somewhat more than the usual amount of bleeding, although the patient's general condition seemed fairly satisfactory. The physician remained at the home for six hours after delivery. Two hours later, eight hours postpartum, the physician was called back to the home and on his arrival found the patient dead. There was no evidence of excessive external bleeding. The family told the physician that the patient had what appeared to be a convulsion just prior to the time of death.

COMMENT

This case has been classified by the committee as a preventable obstetrical death. As the delivery and death occurred in the home, no autopsy was performed, therefore the exact cause of death is not known. The cause of death on the death certificate was given as embolism, although it would seem much more likely that the patient died from hemorrhage and shock. It is not unlikely that there were also lacerations of the cervix or a rupture of the lower uterine segment. When the results in this case are considered, it would seem that the operative delivery in the home was ill advised. There is no information available to the committee which suggests what indication if any existed for the operative delivery. The prolapse of a pulseless umbilical cord does not of itself indicate immediate delivery. The question naturally arises whether the operation was not performed through an incompletely dilated cervix. The application of forceps or a breech extraction through an incompletely dilated or retracted cervix is fraught with the grave danger of deep lacerations of the cervix, which may extend to the lower uterine segment and result in death from hemorrhage. It is possible that this may have been what happened in the present case.

Some members of the committee felt that the patient should have been transferred to a hospital after delivery as her condition postpartum was obviously not satisfactory. There transfusions of whole blood or plasma may have offered her a better chance of survival. It would have seemed wiser to have transferred the patient to a hospital before attempting the operative delivery. In view of the operative delivery in the home without any well recognized indication, the failure to make a diagnosis to explain the poor condition of the patient postpartum, the failure to employ any adequate therapy postpartum, and the failure to send the patient to a hospital where more energetic therapeutic measures could have been employed, it is felt that this should be considered as a preventable obstetrical death.

American Board of Obstetrics and Gynecology.

Applications for the 1944 examinations of the Board are being received at the office of the Secretary, Dr. Paul Titus, 1015 Highland Building, Pittsburgh, Pennsylvania. A number of changes in Board regulations and requirements were put into effect at the May meeting of the Board. Booklets of information regarding these, together with application forms will be sent upon request. All applications for the year 1944 must be in the Secretary's Office not later than November 15, 1943, ninety days in advance of the Part I examination date.

Public Health

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for May, 1943, compared with the same month in 1942, and for the period of January through May, 1943, compared with the same period in 1942, follows:

	May 1943	May 1942	Jan.-May 1943	Jan.-May 1942
Typhoid and Paratyphoid Fever	7	16	51	61
Diarrhea and Dysentery	182	141	602	504
Measles	1,721	953	7,871	4,284
Scarlet Fever	191	65	969	659
Diphtheria	14	21	152	200
Poliomyelitis	2	2	12	5
Meningitis	106	23	598	90
Undulant Fever	1	2	10	10
Rocky Mountain Spotted Fever	0	2	0	3
Tularemia	0	2	23	21

ACTINOTHERAPY IN THE TREATMENT OF TUBERCULOSIS

The value of actinic rays as a therapeutic agent has been recognized for many generations, dating as far back as we have history of medicine. However, little was known about the nature of these rays or their effect upon the human body and the many diseases for which they were prescribed. Even today the subject is controversial. However, certain facts are well known and are thought to be worthy of emphasis.

Actinotherapy undoubtedly has a place in the treatment of certain types of tuberculosis, namely, of the skin, bone, glandular system, peroneum and enteric tract. Even so, the administration is not without danger and should be prescribed only by the physician who is fully acquainted with the kind and quality of rays employed, their depth of penetration, and their effect on the condition for which they are intended, as well as on the system as a whole. In the pulmonary forms of tuberculosis it is doubtful if light treatment ever is of value. On the other hand, it is well known that this therapy often is very dangerous.

In dealing with photochemical light we have in our hands an agent of great potency. We must remember that these rays can kill and cause burns of all degrees of severity, that they may cause reactions in the tuberculous comparable in every way with tuberculin effects and with all that substance's power of working havoc in the patient. Under no circumstances should this treatment be used on subjects in which there is no tendency to pigment formation, or in those cases in which there is fever or those who show febrile reactions following exposure.

Thus, in short-wave light we have an agency of great potency which may accomplish some good but which also can perhaps be quite harmful. Just where the good begins and the harm starts, and where they overlap, is not definitely known as yet. It is believed that sunlight is being unscientifically and often carelessly applied in many cases and that we are only saved from disastrous reactions in many instances by nature's ability to protect from the bad effects by the deposit of pigment. This careless use of sunlight quite often may turn the scale from good to bad results in the treatment of pulmonary tuberculosis especially. We may even have opthalmias, skin diseases, disturbances of metabolism, internal secretions and perhaps disorder of the hemopoietic system caused by light. Unfortunate results will certainly appear if actinic lights are used by the layman at his own discretion. Chemical lights should be used only under direct medical supervision. At this stage of knowledge, even physicians know so little about the application of radiations that they should be very careful indeed in the employment of this agent until time has better defined the limit of their usefulness.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Atlas of Obstetric Technic. By PAUL TITUS, M.D., Obstetrician and Gynecologist to the St. Margaret Memorial Hospital, Pittsburgh; Secretary, American Board of Obstetrics and Gynecology. Illustrations by E. M. Shackelford, Medical Illustrator, John C. Oliver Memorial Research Foundation, St. Margaret Memorial Hospital, Pittsburgh. St. Louis. The C. V. Mosby Company. 1943. 180 pages. Cloth. $7.00.

Essentials of Syphilology. By RUDOLPH H. KAMPMEIER, A.B., M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine; in charge of the Syphilis Clinic and Visiting Physician to Vanderbilt University Hospital. With Chapters by Alvin E. Keller, M.D., and J. Cyril Peterson, M.D. Philadelphia. J. B. Lippincott Company. 1943. xvi-518 pages. 87 illustrations. Cloth. Price $5.00

A Guide to Practical Nutrition. A Series of Articles on Nutrition, Sponsored by the Committee on Nutrition and Deficiency Diseases of The Philadelphia County Medical Society. Edited for the Committee by Michael G. Wohl, M.D., and John H. Willard, M.D. Introduction by Morris Fishbein, M.D., Editor of the *Journal of the American Medical Association*. Reprinted from Philadelphia Medicine, 1941-1942. 98 pages.

Blood Substitutes and Blood Transfusion. Edited by STUART MUDD, M.A., M.D., Professor of Bacteriology, University of Pennsylvania School of Medicine; and WILLIAM THALHIMER, M.D., Director, Human Serum Division Public Health Research Institute of the City of New York, Inc. Charles C. Thomas, Springfield, Illinois. 1942. xiv-407 pages. Illustrated. Cloth. Price $5.00.

This volume is a monograph based upon the proceedings of a symposium held at the June, 1941, meeting of the American Human Serum Association. The reports have been rearranged into a logical series; the final form is a group of twenty-seven contributions, each author an authority in his field.

First there are four reports on the etiology and mechanisms of secondary shock, based in each presentation upon the author's experimental studies. This is followed by discussions of the several methods of preservation of plasma and serum, with detailed descriptions of some of the techniques. The conclusions to be drawn from these papers are that freezing without desiccation preserves plasma in its most nearly normal state, and that plasma dried from the frozen state is far superior to that in which heat is used during desiccation. The third section deals with the use of hemoglobin solutions, serum albumin, and casein digest as blood substitutes. The studies upon hemoglobin promise nothing, and not much more has come of them. The reports on serum albumin solution and casein digest are prophetic, since both have been subsequently demonstrated to be of great value. Section four is a discussion of blood substitutes as they appear in the present world emergency, how they have been used, and methods for the control of plasma preparation and distribution. A miscellaneous group of reports follows, including the storage and transportation of whole blood, studies on the universal donor, a consideration of the Rh factor, and a presentation of the use of blood-group specific substances in the neutralization of group 0 blood. At the time of the symposium actual clinical experience with the blood substitutes was not very great; therefore the reports on the therapeutic use of plasma, etc., are relatively few.

This is a symposium, and there are definite limitations upon its value because of this form of presentation. It is a series of individual opinions and experiences; therefore it is dangerous reading for the uncritical student who is also inexperienced in the field of blood substitutes, and should not be used as a text-book. In this collection of communications, we have a permanent, concentrated statement of the various methods of preservation of plasma. However, even though the results of later work have in some cases been added, this is essentially the status of the blood substitute problem in June, 1941. In this respect the volume is dated. Notably absent from the symposium is a discussion of the utilization of concentrated erythrocyte suspensions, as demonstrated by British workers. The book comprises the work of experts, is scientifically exact, and serves best as a permanent record of the views of these authorities.

A. K.

When Doctors Are Rationed. By DWIGHT ANDERSON, Director Public Relations, Medical Society of the State of New York. And MARGARET BAYLOUS, Therapist, Charleston General Hospital, Charleston, W. Va. Coward-McCann, Inc., New York. 1942. 255 pages. Cloth. Price $2.00.

Written for the lay reader, this volume tells, quite satisfactorily, the story of the present situation in medicine, with particular interest in the role of medicine and of medical personnel in the war effort, in the public health services, in industrial

medical and health services and in the civilian population groups through the nation. The medical reader will smile or frown, dependent upon his sense of humor, at the medical students' program, particularly at his approach to the clinical problem presented in a patient, and at the urologists' plight in meeting civilian needs, since "it has possibly been several years since he splintered (sic) a broken leg."

The non-medical reader is given encouragement: to look to his physician for service; to depend upon the medical society for professional discipline; to appreciate the medical and public health services available to him; to use these services intelligently and to remember that the physician, particularly during these strenuous days and the days to come, merits every consideration to the end that he may serve his patients most effectively.

Finally, the reader is given information which will permit him to understand the rationale of such action, if and when doctors are rationed.

J. P. GRAY, M.D.

Fractures. By PAUL B. MAGNUSON, MD., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School; Attending Surgeon, Passavant Memorial Hospital and Wesley Memorial Hospital, Chicago. Philadelphia. J. B. Lippincott Company. 1942. 4th Edition Revised. xxii-511 pages. 317 Illustrations. Cloth. Price $5.50.

Dr. Magnuson has revised this foutrh edition during the first year of World War II so that physicians and medical students alike may have a practical knowledge of the present concepts in the treatment of all fractures. He has included numerous photographs, drawings and x-rays to illustrate difficult points to describe. The book ideally begins with fundamentals and a general discussion of fractures and lists 10 all important "High-Lights" on the very first page. Pathology, anatomical mechanisms and physical equipment are thoroughly covered. Compound fractures receive notable consideration and the use of Tetanus and Gas Bacillus prophylaxis, Sulfonamide therapy and the immediate treatment of Shock are strongly emphasized. A discussion of associated head injuries is also adequately presented. The last chapter of the book discusses physical therapy in the after treatment of fractures and includes an excellent table on immobilization times and rehabilitation. The appendix contains an excellent bibliography. This book is of inestimable value to those who desire a knowledge of the management of fractures.

GORDON G. CARMICHAEL, M.D.

Fundamentals of Psychiatry. By EDWARD A. STRECKER,, M.D., Sc.D., F.A.C.P., Professor of Psychiatry and Chairman of the Department, Undergraduate School of Medicine, University of Pennsylvania; Psychiatrist to the Pennsylvania Hospital; and Attending Psychiatrist, Psychopathic Division, Philadelphia General Hospital. Philadelphia. J. B. Lippincott Company. 1942. xvii-201 pages. 15 illustrations. Cloth. Price $3.00.

This is a short but very didactic outline of psychiatry. It differs from similar publications by its broad and philosophical approach. A successful attempt is made to eliminate the slightest traces of irrational thinking in this field and to treat psychiatry at the same level and by the same methods as any other medical science. This approach leads the author necessarily to discuss the basic principles of his rational method, such as causal analysis, classification, purpose and scope of examination, nature of symptoms, etc., thus helping the reader and student to conceive psychiatry (so confusing in the beginning) as a systematic, although flexible whole. Although a skeptical attitude may be justified with regard to the use of tables and diagrams in psychology and psychopathology, the author fully succeeded in his effort to illustrate some important facts, such as the contribution of the various etiological factors to the outbreak of a mental disease, the role a given factor plays in the diagnosis, when compared with the other factors, the relative accord between ideation and its emotional expression in the various psychotic conditions, the relative degrees of deterioration, the relatively greater departure from the "normal" involved in psychosis as contrasted to psychoneurosis, etc.

W. RIESE.

The Kenny Concept of Infantile Paralysis and Its Treatment. By JOHN F. POHL, M.D., Clinical Assistant Professor of Orthopedic Surgery, University of Minnesota; Attending Orthopedic Surgeon, Minneapolis General Hospital. In Collaboration with SISTER ELIZABETH KENNY, Honorary Director the Elizabeth Kenny Clinics of Australia; Honorary Director the Elizabeth Kenny Institute, Minneapolis. With a Foreword by FRANK R. OBER, M.D., President, The American Orthopedic Association. Bruce Publishing Company, Minneapolis and St. Paul. 1943. 366 pages. Illustrated. Cloth. Price $5.00.

Dr. Pohl attempts a scientific explanation of the observations and success of Sister Kenny. It is still rationalization, as even the author admits.

The real importance of the book lies in the challenge it flings at the profession. We have closed our eyes to many of the clinical features of the dis-

ease infantile paralysis, because we did not understand the pathology behind them. Now we are faced with actual statistics, and to them we must open our eyes, even though the explanation is still hypothetical.

By the Kenny concept, muscles which are in spasm during the acute stage of the disease represent the affected nerve-muscle units. Formerly these were considered to be the normal ones. The antagonists of these spastic muscles are flaccid, not, as previously thought, because their anterior horn cells have been invaded, but because they have been "alienated". A physiological block is said to have resulted from the pain and spasm in the affected, opposing muscles. Foments are used to relax the spasm, then careful re-education and training is directed at re-establishing function in the "alienated" muscles.

Now comes an interesting and pertinent point. Dr. Pohl likens the changes which later occur in the spastic muscles to the ischemic contracture of Volkmann. There is, he says, a change in the muscle substance probably due either to the direct effects of the virus or to some circulatory disturbance. Can we reconcile these contractures with the orthodox concept of the disease? I think not. We have not controlled them with the orthodox treatment. Pathologists, neurologists, and physiologists must backtrack and follow this new lead before anything more fundamental can be added.

There are many other stimulating points, and the terms incoordination, nerve-muscle dissociation, mental awareness, etc., have been given added significance. For the most part the book is difficult reading, but I urge everyone, skeptic and enthusiast alike, to read at least Dr. Knapp's twelve-page commentary before he considers himself as one who understands infantile paralysis.

About two-thirds of the 355 pages is a monotonous rephrasing and repetition of the statements Sister Kenny has so persistently and defiantly presented many times before. With his better academic background Dr. Pohl is naturally able to present the material in a more convincing way than has been previously done. This in itself is a valuable contribution.

Physiotherapists and technicians carrying out the actual treatment will welcome the detailed description of each step to be used in the care of each muscle group. There is an interesting classification of muscles, a chapter on balneotherapy, and another on orthopedics. Each is alloted a specific, but limited role in the treatment as presented by Dr. Pohl.

D. T. IMRIE, M.D.

The Inner Ear. Including Otoneurology, Otosurgery, and Problems in Modern Warfare. By JOHN FISCHER, M.D., Staff Member, Beth Israel Hospital, Boston. And LOUIS E. WOLFSON, M.D., Instructor in Ear, Nose, and Throat, Tufts Medical School; Senior Surgeon in Ear, Nose, and Throat, Boston Dispensary. 1943. Grune and Stratton, New York. xii-421 pages. Illustrated. Cloth. Price $5.75.

This book is of particular interest to the otologist, neurologist and neuro-surgeon. Any thesis covering the physiology of the labyrinth must in itself either be very confusing by covering all the experimental data on the subject or accept certain fundamental physiologic laws to explain the functional tests of the labyrinth. Dr. Fischer has a fairly happy medium in his discussion of the subject.

The chapter on the functional tests of the inner ear, and the author's evaluation of abnormal reactions to these tests, is very stimulating and instructive. It reflects the fine type of work done by the Vienna School of Otologists for years.

A review of Otosclerosis and Meniere's Syndrome is included and brought up to date. The inflammatory diseases of the inner ear and their intra-cranial complications are discussed, together with advances made by the introduction of chemotherapy.

An interesting and timely section on war trauma and the role of the inner ear in aeronautics is included. Particular interest is shown to the importance of and methods used in examining the ears of prospective fliers.

The whole book emphasizes the important role played by the otologist in rendering diagnostic aid to the neurologist and neuro-surgeon, where lesions of the cerebellum, inner ear and certain of the cranial nerves occur.

As usual with any first edition, particularly of such a complicated subject, a few contradictory statements are to be found. These however do not detract appreciably from the value of the book.

MAYNARD SMITH, M.D.

VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

(Founded by Landon B. Edwards, M. D., April, 1874)

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VOL. 70 JULY, 1943 No. 7

The Medical Side of Thomas Jefferson

THIS nation that is now struggling so hard to preserve the various freedoms, is not too busy to celebrate the two-hundredth anniversary of the great Virginian who requested that on his tombstone be inscribed: "Here was buried Thomas Jefferson, Author of the Declaration of Independence, of the Statute of Virginia for Religious Freedom, and Father of the University of Virginia".

He said nothing about his being President of the United States, Governor of Virginia, Secretary of State, Ambassador to France, about the Louisianna Purchase, or his architectural achievements. No mention was made that he was the father of the Bureau of Standards, the Geodetic Survey, the Patent Office, the President of the American Philosophical Society, etc. The many-sidedness of his nature was truly astounding. He was withal a philosopher and a scholar and therefore, as was common in his day, he was interested in medicine. Many valuable side lights on medicine, as it was practiced, are found in his writings. When he built the University of Virginia, he selected the first faculty and Robley Dunglison was the Professor of Medicine. He regarded medicine as a branch of learning or discipline, as we would now say, on the same footing as mathematics or the ancient languages. Another member of the original faculty that he imported was John Patton Emmet, M.D., father of Thomas Addison Emmet, and he thus greatly benefited gynecology, a specialty that was unheard of in his day. In fact there were no specialists of any kind in medicine in Jefferson's time. Any educated person considered himself qualified to practice medicine and often did. It is well known that William Byrd of Westover and Thomas Jefferson of Shadwell, Monticello, and Poplar Forest, practiced medicine on their slaves and even their families. The former was especially severe in his criticism of the professional doctors. It should be remembered that the practice of medicine was comparatively simple. Surgery was confined to the surface of the body. The body cavities were rarely invaded. Jefferson

was fifty-six years old when McDowell performed his epochal operation of ovariotomy. Eighteenth century medicine was in the throes of various "systems". In Jefferson's time the Brunonian theory was dominant. Disease was either sthenic or asthenic. There was no pathology to hamper the theorizing. For the sthenic you bled, purged, or gave a vomit. For the latter you supported the patient with opium or alcohol.

Thomas Jefferson was extremely interested in all forms of knowledge and made notable contributions to science. Beside scientific agriculture, he studied Indian relics and fossils. He described the bones of a prehistoric animal to which he gave the name "Megalanyx Jeffersoni". His greatest medical achievement was the introduction of vaccination into this country. With the possible exception of Benjamin Waterhouse, no one had more to do with that great hygienic measure. He himself vaccinated some 200 of his household and neighbors and he showed his scientific bent by recording the number and nature of the complications. Two were made ill with high fever. He recorded the number that had pustules other than at the side of the inoculation and the number who had enlarged glands, etc. A serious problem at that time was the preservation of the potency of the cow pox virus. He was of the opinion that the eighth day was the optimum time at which to remove the scab which was to be used for transmitting the disease. He devised a means for successfully transporting the scab. It was thought that the temperature of the atmosphere was the reason that the scab lost its potency when transported any distance. Jefferson sealed the scab in a small vial and placed that in a larger bottle which was filled with water. The method was successful. Not content with introducing vaccination into his own neighborhood, he saw to it that vaccine was sent to Richmond, Petersburg, Washington, and Philadelphia. He even instructed Lewis and Clarke to take it with them to the Indians in the Northwest.

Ideals and Ideologies

IN these days of planned currency, planned prosperity, and planned agriculture, when people look to their government rather than to themselves for a solution of all their problems, we hear a lot about ideologies, but precious little about ideals. Formulae rather than character are the important things. Homely virtues are entirely outmoded. Old fashioned folk had their ideals, usually exemplified by some person or persons whom they admired and loved. They lacked much of attaining their standard, but at least their ideals gave direction to their lives. At our mother's knee, like thousands of other Southern children, we were taught that General Lee was the very ideal of perfect manhood. Mother taught us that *duty* is the sublimest word in the English language. General Lee believed it and that was all there was to it. There was no argument about it, whatever. Later, another ideal came into our life, expressed by the Biblical word, *charity*. Our father, like hundreds of other old fashioned doctors, was the very embodiment of that ideal. We used to say that he would rather get up in the night and go to see a charity patient than one who paid him cash. We certainly never heard him complain about a poor person being unreasonable. When we went to college, Dr. Arthur Wightman, our biology teacher, supplied a third ideal. He was constantly extolling the virtues of *truth*. We can hear him now quoting the Hopkins motto, *"Veritas Vos Liberabit"*. Finally, in the medical school, that great personality, William Osler, added the fourth and perhaps the greatest ideal, the one which makes the other three dynamic. His master word was *work*.

Societies

Norfolk County Medical Society.

At the annual meeting of this Society in June, Dr. N. F. Rodman succeeded to the presidency and the following officers were elected: president-elect, Dr. F. C. Rinker; vice-president, Dr. James V. Bickford; and secretary-treasurer, Dr. Lockburn B. Scott, re-elected for the twenty-fifth consecutive year. Delegates and alternates to the Medical Society of Virginia were also named, and Dr. William A. Simpson, Portsmouth, was elected to membership. The next regular meeting will be held on October 4th.

Richmond Academy of Medicine.

The last meeting of the Academy before the summer intermission was held on May 25th and the program was planned to honor its past presidents. Twenty-one of the twenty-six living past presidents were in attendance and the program was presented by two of these—Dr. M. Pierce Rucker, whose subject was "Tuberculosis of the Vulva", and Dr. James H. Smith, who read a paper on "The Treatment of Pneumonia and Its Complications". Dr. Arthur S. Brinkley presided and the meeting was followed by a buffet supper in the dining room.

The Virginia Peninsula Academy of Medicine

Held its regular monthly meeting on May 17th at Camp Patrick Henry near Newport News. The attendance was larger than usual due to the presence of some two hundred medical officers from the various army posts on the Peninsula. After dinner, the scientific program was presented by personnel of the Camp as follows: Introduction by Col. Scott C. Runnels, MC., Commanding Officer; Pitfalls in Urological Diagnosis and Treatment by Lt. Col. C. A. Bowers, MC., Chief of Surgical Service; Blast Injuries by Maj. Edwin G. Faber, MC., Chief of Medical Service and The Use of the Bronchoscope as an Aid in Treatment in Diseases of the Chest by Capt. J. R. Birch, MC., Chief of E. E. N. T. Section.

The following officers were elected: President, Dr. Waverly R. Payne, Newport News; vice-president, Dr. Harvey G. Bland, Newport News; and secretary-treasurer, Dr. Robert H. Wright, Jr., Phoebus. The next meeting will be held the 3rd Monday in September after the customary summer adjournment.

News

Southern Medical Association to Meet in November.

The executive committee of the Association met recently in New Orleans and voted to hold its annual meeting in Cincinnati, Ohio, November 16, 17 and 18, and to have the program equally divided between civilian and military medicine. Dr. Harvey F. Garrison of Jackson, Miss., is this year's president.

News from the University of Virginia.

The Baltimore-Wáshington Dermatological Society held a meeting at the University of Virginia Hospital on Saturday, May 29. The following cases were demonstrated by the staff of the Department of Dermatology and Syphilology (Drs. D. C. Smith, J. C. Shafer, P. E. Jones, A. J. Crutchfield, and P. A. Booker): Dermatomyositis, Linear lichen planus, Erythroplasia of Queytat, Molluscum contagiosum, Keratosis follicularis, Granuloma annulars, Lichen planus erythematosus, Glossitis rhombica mediana, Lymphogranulama inguinale, Lichen sclerosus atrophicus, Primary tuberculosis complex-face, Erythema induratum, Monocytic leukemia cutis, Porokeratosis, Pemphigus in a child, Gaucher's disease, Rocky Mountain spotted fever, Lupus vulgaris, Xeroderma pigmentosa, Addison's disease, Erythema scarletenoides, Cases of primary, secondary and late syphilis. There was a demonstration of fever therapy in neurosyphilis with foreign protein intravenously. Dr. Alfred Chanutin, Professor of Biochemistry, reviewed the subject of lipid metabolism as it relates to psoriasis.

Dr. F. D. Woodward attended the Council Meet-

ing of the American Laryngological, Rhinological and Otological Society in New York on June 1. As a member he attended the examinations of the American Otolaryngology Board held in New York on June 2, 3, 4, and 5.

Dr. M. K. Humphries took the American Board of Otolaryngology Examination in June.

On June 6, 7, and 8, Dr. Robert V. Funsten attended the meeting of the American Orthopedic Association in New York. A report was heard from the Investigation Committee of the Sister Kenny Treatment of Infantile Paralysis.

News from the Medical College of Virginia.

Dr. Tom Spies, Hillman Hospital and Clinic, Birmingham, Alabama, and associate professor of medicine, University of Cincinnati, was a recent college visitor.

Dr. Lynn DeF. Abbott, assistant professor of biochemistry, has joined the armed service. He will be replaced on July 1 by Dr. Miriam Clarke Madison.

Dr. Leroy Smith, an alumnus of the class of 1936, has been appointed associate in surgery and oral surgery. Dr. John Reed, a graduate in the class of 1928, has also been appointed associate in surgery.

Enrollment for the session which began April 5, is: Medicine, 313; dentistry, 148; pharmacy, 61; nursing, 182. In the school of pharmacy a freshman class will not enter until July 5. The school of nursing admitted a class in February and will admit classes in June and September.

Dr. William T. Sanger, president, made the annual Commencement address at Madison College, Harrisonburg, Virginia, on June 7.

Dr. Claude Neale, assistant professor of psychiatry, is spending the month of June visiting various medical schools, looking over their departments of psychiatry. This was made possible by a travel grant from the Rockefeller Foundation.

Although formal contract has not been signed, it is anticipated that the army and navy student training program will become effective for the army on June 20 and for the navy on July 1. Students under the army training program in the schools of medicine and dentistry have received physical examinations and went to Camp Lee for four days prior to June 20 for processing. The institution has not received definite instructions from the navy on the processing of its members.

Dean Wortley F. Rudd of the School of Pharmacy was honored on June the 11th at a dinner given at the Country Club of Virginia by the Virginia Section of the American Chemical Society, which he helped organize in 1913.

Dr. E. F. Gouldman,

Formerly of Colonial Beach, who has for the past two years been engaged in special work in obstetrics and gynecology, has accepted the position of associate resident in obstetrics for a year at John Gaston Hospital in Memphis, Tennessee, effective June 15. He has recently been in Canton, Ohio.

Dr. I. C. Riggin,

State Health Commissioner, has been selected as chairman of a committee on public health in the Bureau of Placement, Procurement and Assignment Service, War Manpower Commission. The Committee will be called upon for advice and guidance in the work of maintaining adequate public health services in the united public health services in the United States.

Married.

Dr. Donald Roscoe Gilbert, Melvin Hill, N. C., and Miss Connie Mae Evans, Clifton Forge, May 15th. Dr. Gilbert is a graduate of the Medical College of Virginia, class of 1942. They will make their home in Spartanburg, S. C.

Lt. Alexander Erskine Sproul MC., and Miss Ruth Eileen Peters, both of Staunton, May 27th. Dr. Sproul graduated in medicine at the University of Virginia in 1941 and is now stationed at Pocatello, Idaho.

Dr. J. Warren White,

Norfolk, has been named president of the Hampden-Sydney alumni fund for the coming year, succeeding Dr. H. Wallace Blanton of Richmond.

Virginia Graduate Receives Trudeau Medal.

Dr. David Russell Lyman, a graduate of the University of Virginia and Johns Hopkins Medical School, has been awarded the Trudeau Medal which is given annually to one whose work has been outstanding in the campaign against tuberculosis. He

has been actively engaged in the campaign for the control of tuberculosis since his early years in medicine when he was associated with Lawrason Brown at Saranac. Since 1918, Dr. Lyman has managed the Gaylord Farm Sanatorium at Wallingford, Connecticut. He was one of the founders of the National Tuberculosis Association and in 1918 he assisted Livingston Farrand, the head of the Rockefeller Foundation, in rehabilitation work in France. In the same year he was made president of the National Tuberculosis Association. Dr. Lyman is also a former president of the Connecticut State Medical Society.

American Medical Association.

The annual session of the A. M. A. this year was limited to a meeting of the delegates and to two general meetings which were held in Chicago, June 7-9. Dr. James E. Paullin, Atlanta, succeeded Dr. Fred W. Rankin to the presidency, and Dr. Herman Louis Kretschmer, Chicago, was named president-elect.

Delegates from Virginia were Dr. Walter B. Martin of Norfolk, now stationed at Battle Creek, Mich., and Dr. J. Morrison Hutcheson of Richmond.

Dr. Robert S. Montgomery

Has been elected president of the South Hill Chamber of Commerce.

Special Consultant in Psychiatry for Army Air Forces.

Dr. Edward A. Strecker, president of the American Psychiatric Association, and professor and head of the department of psychiatry at the University of Pennsylvania's Graduate School in Philadelphia, and the Medical School of the same university, has been named Special Consultant to the Secretary of War for the Air Forces of the United States Army. In this capacity, he will act as advisor to War Secretary Stimson on all questions relating to psychiatry in the Air Forces, and will be on call at all times by the War Department.

Recently he was named Consultant in Psychiatry to the Surgeon General of the U. S. Navy, in which capacity he acts as advisor in psychiatry to the Navy's Bureau of Medicine and Surgery.

The Association of Military Surgeons of the United States

Will hold its 51st annual convention in Philadelphia at the Bellevue-Stratford Hotel, October 21-23, inclusive.

The three-day convention will assemble doctors from the war fronts and from the great base hospitals where rehabilitation of the wounded is in progress. Numerous forum lectures, practical demonstrations, moving pictures and teaching panels are planned to present information on the latest techniques of wartime medicine and surgery.

Honorary chairman of the convention this year is Rear Admiral Ross T. McIntire, Surgeon General of the Navy. The general chairman is Captain Joseph A. Biello, Medical Corps, USN, who is District Medical Officer of the Fourth Naval District.

National officers of the association are as follows: President, Captain William L. Mann, Medical Corps, USN, National Naval Medical Center, Bethesda, Md.; first vice-president, Col. Lucius A. Salisbury, Medical Corps, New York National Guard; second vice-president, Assistant Surgeon General Warren F. Draper, U. S. Public Health Service; third vice-president, Col. Edgar Erskine Hume, Medical Corps, U. S. Army; fourth vice-president, Col. Irvin Abell, Medical Reserve, USA; fifth vice-president, Dr. Martin L. Cooley, Veteran's Administration; secretary, Col. James M. Phalen, USA (Ret.), and executive secretary, Stuart E. Womeldorph.

The Winthrop Chemical Company

Announces the appointment of Edward Dawson Davy, Dean of the School of Pharmacy, Western Reserve University, Cleveland, as Director of their Pharmaceutical Division. Mr. Davy will make his headquarters at the company's plant at Rensselaer, N.Y. For the past 21 years Mr. Davy has been associated with Western Reserve, serving as Professor of Pharmaceutical Chemistry until his appointment as Dean of the School of Pharmacy in 1940.

Dr. A. E. Sherndal, plant superintendent of Winthrop Chemical Company, and long associated with the company, has been elected vice-president. Dr. Sherndal recently was awarded an honorary degree of Doctor of Science by St. Lawrence University for his research work in the synthesis and manufacture of Atabrine.

The West Virginia State Medical Association,

At its recent annual meeting in Charleston, under the presidency of Dr. R. J. Wilkinson of Huntington, had a registered attendance of 323 doctors, which exceeded expectations of most of the mem-

bers. Dr. Robert J. Reed, Jr., of Wheeling was named president to take office January 1, 1944, with Dr. H. G. Steele of Bluefield and Dr. T. G. Reed of Charleston as vice-presidents. Dr. T. M. Barber of Charleston was re-elected treasurer and Mr. Charles Lively, also of Charleston, continues as executive secretary.

Dr. Catherine W. R. Smith

Has been appointed as health officer of the Smyth-Washington-Bristol Health District with headquarters at Abingdon.

Duke University.

The Medical School and Woman's College of this University will open a School of Physical Therapy on September 27th, with Dr. Lenox D. Baker, head of the Duke orthopedic service as medical director, and Miss Helen Kaiser, past president of the American Physiotherapy Association, recently of Cleveland, as technical director. This will be a nine months course of study and training and a number of scholarships will be given for the benefit of women interested in this field of work. Full information may be obtained from Duke University at Durham, N. C.

Dr. Frederick Thackston,

Who has been connected with the Benedict Coal Corporation with headquarters at St. Charles, is locating in Bristol, Virginia-Tennessee, July 1st, where he will be engaged in private practice as well as industrial practice with the Bristol Aircraft Corporation.

Grants to Medical Schools.

The medical advisory committee of The American Foundation for Tropical Medicine, Inc., at a meeting of directors on April 14, authorized grants to six North American medical schools totaling $26,100 during the first quarter of 1943.

These grants, made possible by contributions and pledges by nineteen American corporations, are being used to strengthen teaching or research programs in tropical medicine and parasitology at the various schools.

Those to receive aid were: New York University, College of Medicine; Tufts College Medical School; Tulane University School of Medicine; University of Manitoba Faculty of Medicine; University of Nebraska College of Medicine and Yale University School of Medicine. Other applications are pending.

Companies which have made contributions or formal pledges of support include: Abbott Laboratories; American Cyanamid Company; Ciba Pharmaceutical Products Corp.; Firestone Plantations Company; General Foods Corporation; Hoffman-La Roche, Inc.; The Lambert Company; Lederle Laboratories; Eli Lilly and Company; Merck & Co., Inc.; National Carbon Company; Parke Davis and Company; E. R. Squibb & Sons; United Fruit Company; William R. Warner & Company; Winthrop Chemical Company; Winthrop Products, Inc.; and John Wyeth & Brother.

Surgeon General of the Army.

The nomination of Brigadier General Norman T. Kirk as Surgeon General of the Army with the rank of Major General was confirmed by the Senate the latter part of May and on June 1 he entered upon his new duties, succeeding Major General James C. Magee, retired.

The American Congress of Physical Therapy

Will hold its annual scientific and clinical session September 8 to 11, at the Palmer House, Chicago. Rehabilitation is in the spotlight today and Physical Therapy plays an important part in this work. The annual instruction course will be held from 8:00 to 10:30 A. M., and from 1:00 to 2:00 P. M. during the days of September 8, 9 and 10, and will include a round table discussion group from 9:00 to 10:30 A. M., Thursday, September 9. The scientific and clinical sessions will be given on the remaining portions of these days and evenings. A feature will be an hour demonstration showing technic from 5:00 to 6:00 P. M. during the days of September 8, 9 and 10. All of these sessions will be open to the members of the regular medical profession and their qualified aids.

For information concerning the instruction course and program of the convention proper, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago, Illinois.

Location Wanted

In Virginia by physician, aged 61, excellent health, where community is in need of medical services. Address "C. W. R.", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Physician

Desires position or location where remuneration is weekly or monthly. Address "Physician", care this journal, 1200 East Clay Street, Richmond 19, Va. (*Adv.*)

Obituaries

Dr. Edgar Williams Young,

Prominent Petersburg physician, died May 21st, at the age of fifty-five. He graduated from the former Baltimore Medical College in 1911. Dr. Young served in World War I and was seriously wounded in the Battle of Ypres. He had practiced in Petersburg since 1920. Dr. Young had been a member of the Medical Society of Virginia for thirty years. His wife survives him.

A special meeting of the Petersburg Medical Faculty was held on May 22, to express a tribute of respect to the memory of their late colleague, Doctor Edgar W. Young.

WHEREAS, God in His infinite wisdom has this day removed from our midst a true friend and loyal colleague, who faithfully served his community, state, and nation; now, therefore, be it

RESOLVED: (First) That the Petersburg Medical Faculty bows in submission to the Divine will and deeply regrets and mourns its loss.

RESOLVED: (Second) That in the death of Dr. Young the profession has lost a valued associate and the community a useful citizen; one who volunteered his services to his country in the First World War, who was wounded in battle, and who was decorated with the Order of the Purple Heart.

RESOLVED: (Third) That the Petersburg Medical Faculty offers to his widow and to his brothers and sisters their sincere and deep sympathy in their irreparable loss; and

RESOLVED: (Fourth) That these resolutions be spread on the minutes of the Faculty, that a copy be sent to the family, and to the VIRGINIA MEDICAL MONTHLY, and be published in the *Progress-Index.*

E. L. MCGILL, M.D., *Chairman*
MEADE C. EDMUNDS, M.D.
MASON ROMAINE, M.D.

Dr. Archie Clay Monroe,

Well-known physician of Richmond, died May 21st. He was a native of Fauquier County and sixty years of age. Dr. Monroe graduated from the former University College of Medicine, Richmond, in 1907, and had practiced in Richmond for more than twenty years. He was a Mason and a member of the Medical Society of Virginia, having joined in 1907. His wife and two daughters survive him.

Dr. William Townes Wimbish,

Petersburg, died June 4th. He was sixty-eight years of age and received his medical degree from the University of Virginia in 1896. Following his graduation, Dr. Wimbish practiced in Mecklenburg County for thirty years and became a member of the medical staff of Central State Hospital in Petersburg in 1924. He had been a member of the Medical Society of Virginia for forty-one years. Four sisters and two brothers survive him.

Dr. Robert Thomas Hawks,

Coroner of Prince George County for twenty years died at his home at Carson June 8th, following a heart attack. He was sixty years of age and a graduate of the Medical College of Virginia in 1907. Dr. Hawks was prominent in the civic life of his community. He was a Mason and formerly a member of the Medical Society of Virginia. His wife and two children survive him.

Dr. Warren Fales Draper, Jr.,

Arlington, died May 17th of brain tumor. He was thirty years of age and a graduate of the George Washington University School of Medicine, Washington, D. C. Dr. Draper was an assistant surgeon in the U. S. Public Health Service and the son of the former State Health Commissioner for Virginia.

Dr. Robert Sheild Perkins,

Dean of the medical profession of Norfolk, died in June, at the age of ninety-five. He was a graduate of the Hahnemann Medical College, Philadelphia, in 1872. Dr. Perkins continued his practice in Norfolk until shortly before his death. He was a familiar figure on the streets on his rounds to his large clientele, as he had always spurned the automobile and held to his good old horse and buggy.

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RICHMOND, - - - - - - - - - VIRGINIA

. . . MEDICAL AND SURGICAL STAFF . . .

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JAMES H. SMITH, M.D.
HUNTER H. MCGUIRE, M.D.
MARGARET NOLTING, M.D.
JOHN P. LYNCH, M.D.

Orthopedic Surgery
WM. TATE GRAHAM, M.D.
JAMES T. TUCKER, M.D.

Pathology
J. H. SCHERER, M.D.

Urology
AUSTIN I. DODSON, M.D.
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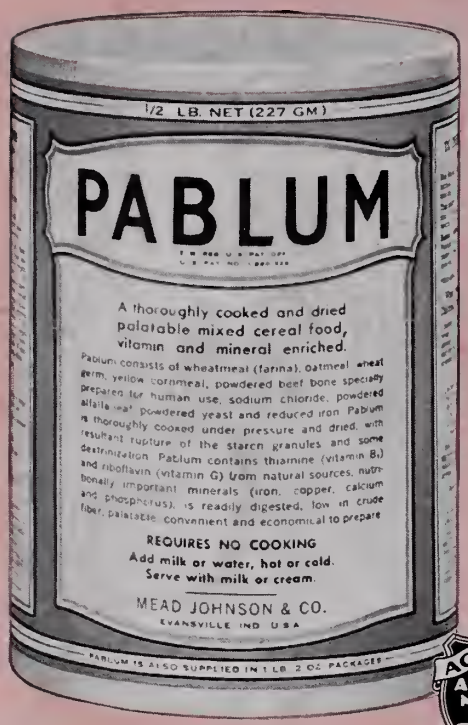

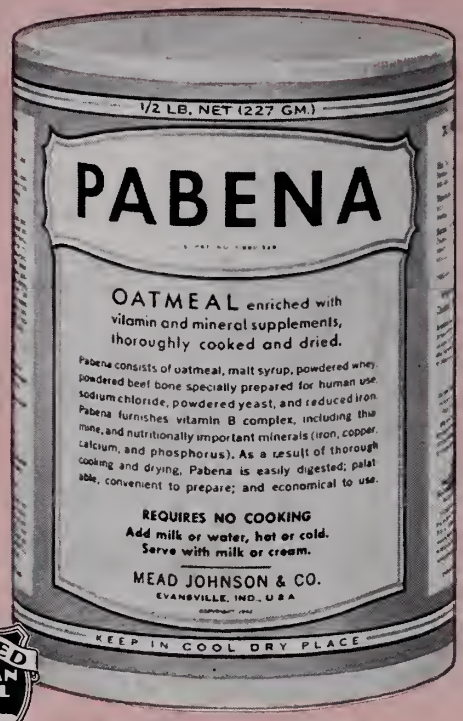

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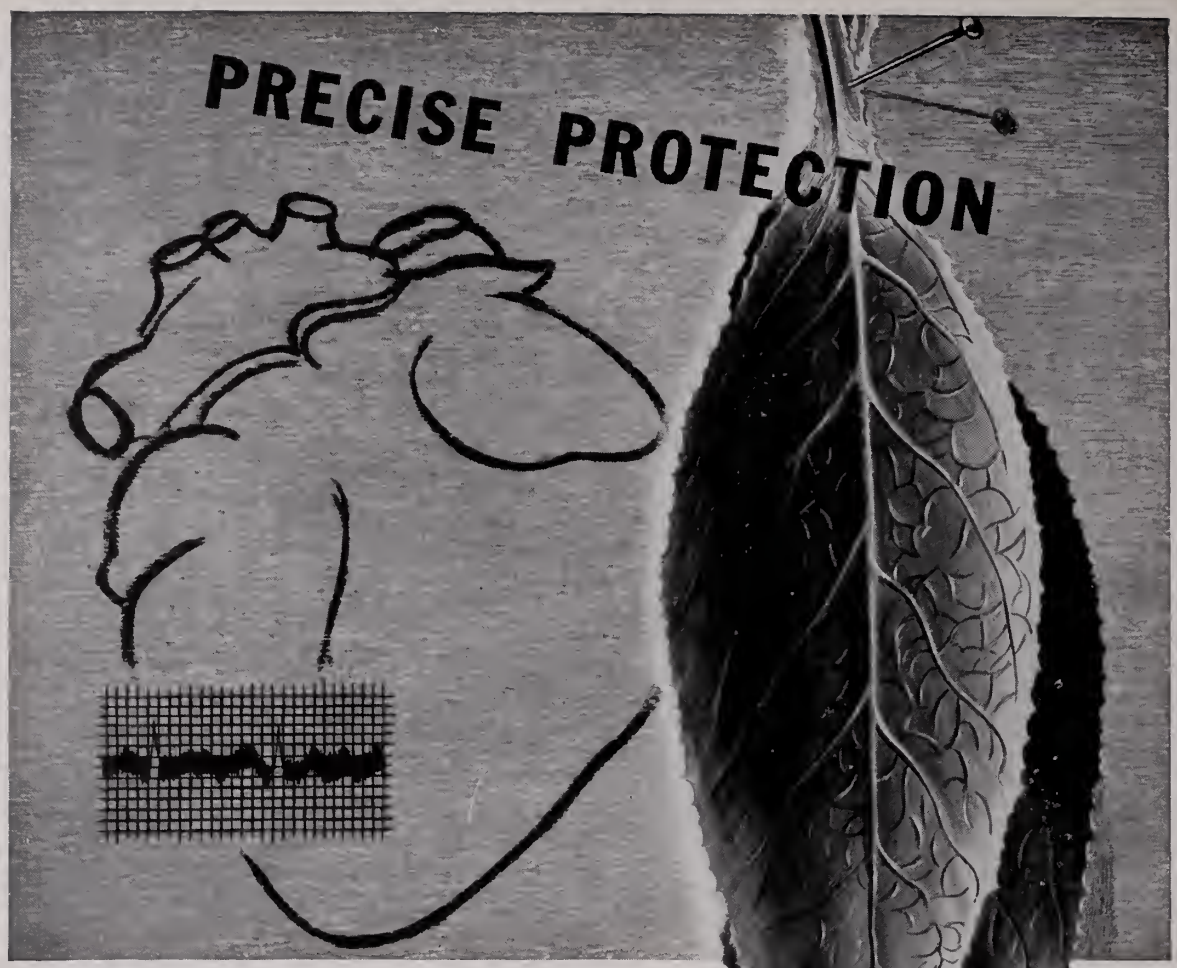

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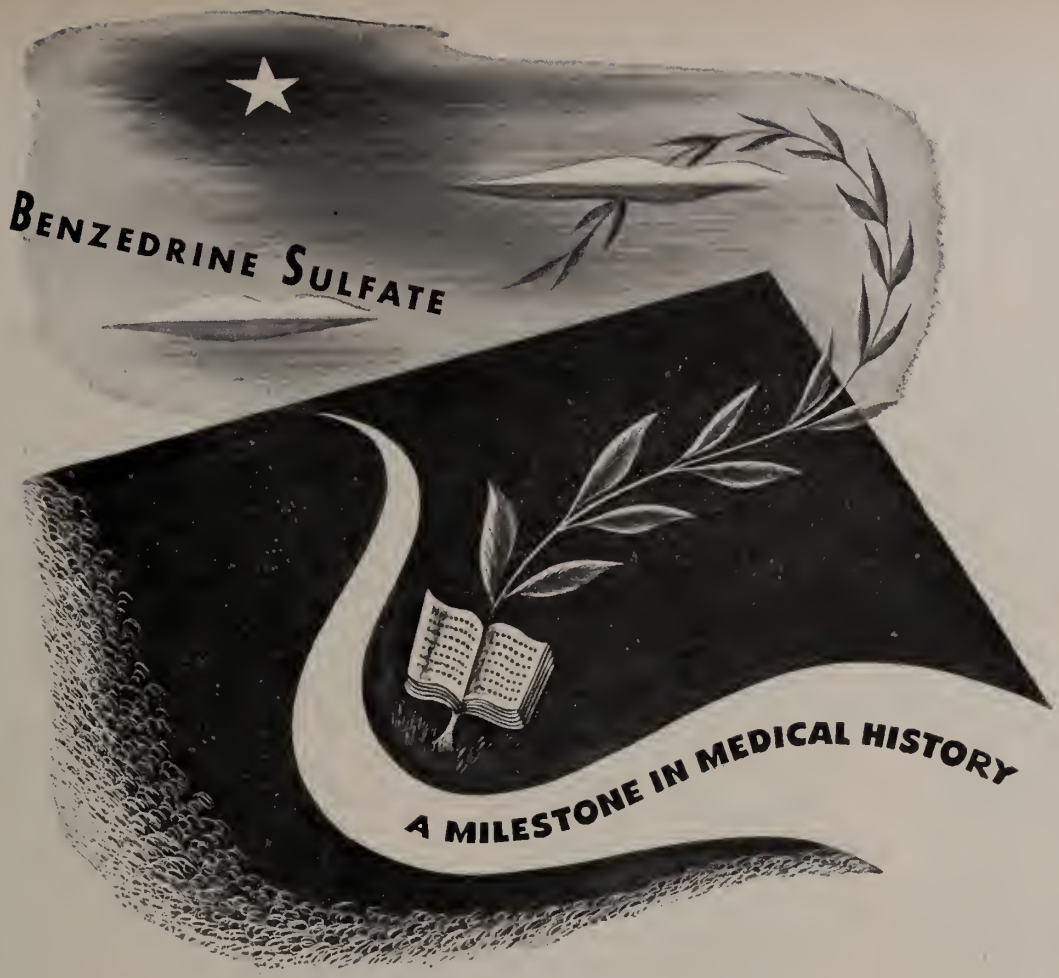

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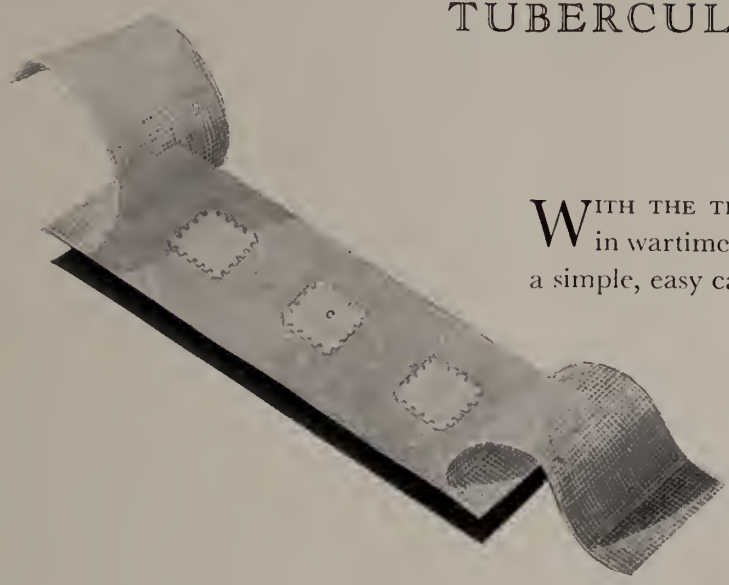

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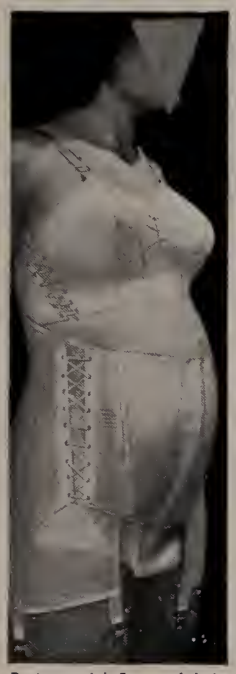

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Virginia Medical Monthly

Official Publication of the Medical Society of Virginia

Vol. 70, No. 8
WHOLE No. 1094.

RICHMOND, VA., AUGUST, 1943.

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Guest Editorial

The American Way in Chemistry

TEN years ago the production of pure vitamins amounted to practically nothing as a business. Today it is big business with yearly sales of the order of hundreds of millions of dollars and this is only the beginning, not because of the increased use of these chemicals in pharmaceuticals but because of the food enrichment program, referred to by Dr. C. R. Addinall in his paper in this number. The pharmaceuticals call for pounds of vitamins, at the most, whereas the food enrichment program for all forms of life calls for tons of them. The use of vitamins in the poultry business is tremendous. Vitamins are now being used in the feed of farm animals and what a market this makes available to the producers of synthetic vitamins! The flour enrichment program, whether one approves of it or not, calls for tons of thiamine, riboflavin and nicotinic acid right now. What will be the demand if this program spreads over the world in the post-war food program being planned? Right in our midst today, there is happening one of the most remarkable events in the history of chemical industry. Virginia is playing its part in this development at the little town of Elkton.

The milestones having to do with putting on the market a synthetic vitamin can well be illustrated by the recent brilliant investigative work on biotin. Vitamins must first be isolated in pure crystalline form. This was done for biotin in 1936 when Kőgl and Tőnnis announced the isolation of its methyl ester from egg yolk. Chemical structure investigations came next. In late 1942, du Vigneaud and collaborators announced what they believed the structural formula for biotin to be. Since then several groups of investigators in this country and abroad have been working on the third milestone, the synthesis of biotin. An article in SCIENCE of May 14, 1943, by Harris, Wolf, Mozingo and Folkers, of the Merck and Company research laboratories, begins with these two important statements, "Biotin has been obtained by a total synthesis in this laboratory, and it has been found to be identical with the natural product. This verifies the structure assigned to biotin." If this work is verified by other investigators the next milestone will be tackled, that of producing synthetic biotin on a commercial scale and at reasonable cost. If this is accomplished successfully pure biotin can be made available in ton lots. At the present time there is far less than an ounce of the pure natural product in existence. The final milestone has to do with finding practical uses for the synthetic substance. One potential use certainly for biotin is in causing yeast to grow faster and the brewery industry uses lots of yeast!

Practical examples of what the accomplishment of these milestones in vitamin research will bring about are the following: Ascorbic acid (vitamin C) sold for $213.00 an ounce in 1934. It sells now for $1.07 an ounce and is being shipped abroad lend-

lease in ton lots. In 1935 thiamine (vitamin B_1) cost $300.00 a gram to produce. The latest quotation for it is $.35 a gram. Nicotinic acid dropped from $35.00 a pound in 1937 to $5.00 per pound today and riboflavin (vitamin B_2), which sold for $17.50 a gram in 1938 now brings $.57 for the same amount. In spite of the tremendous vitamania which has accompanied these developments, the large scale production of synthetic vitamins is one of the miracles of modern chemistry and medicine, *and it is 99 per cent American.*

Of the thirteen vitamins almost universally agreed upon as existing, *all* can be produced in pure form, since vitamin A esters are now available by high vacuum distillation and vitamin D_2 and D_3 are manufactured as pure crystalline substances, the one by irradiation of ergosterol and the other by a similar treatment of a derivative of cholesterol. Vitamins A and D were formerly sold only as concentrates from fish-liver oils. Vitamins C, E, K and the eight generally recognized members of the so-called B complex can be made in a laboratory. Thiamine, nicotinic acid and riboflavin of this group, like vitamin C, are manufactured in chemical plants on a tonnage basis. Pyridoxine (vitamin B_6), pantothenic acid and especially biotin are being made synthetically in very much smaller quantities. There is not complete agreement as to whether inositol, choline and para-amino-benzoic acid should be considered as vitamins. These substances have been known for many years as ordinary organic chemicals so their production in ton lots will be a simple matter if they are ever required in such amounts. There are about twenty other substances being discussed in the chemical literature which may "make" the vitamin fraternity sooner or later, but like folic acid they have not yet quite "made the grade".

Certainly such results over a ten year period from research of this order would be impossible without university-industry team work of a high degree in a country where workers are well trained in this intricate field, where free enterprise is an inalienable right of the citizenry, and where foresight is an essential ingredient in business and research.

SIDNEY S. NEGUS,* PH.D.

*Dr. Negus is professor of Chemistry and Biochemistry at the Medical College of Virginia, Richmond.

Floral Eponym (6)

KUHNIA Eupatorioides was named by Linnaeus after Adam Kuhn (1741-1817) of Philadelphia who was the first professor of Botany in America. Kuhn began the study of medicine with his father, Dr. Adam Simon Kuhn. He then went to Upsala where he studied under Linnaeus. He also studied in London for a while and took his M.D. at Edinburgh in 1767. When he returned to Philadelphia in 1768 he became professor of materia medica and botany in the College of Philadelphia. He was physician to the Pennsylvania Hospital, consulting physician Philadelphia Dispensary, one of the founders and in 1808 president of the College of Physicians of Philadelphia. When 73 he "grieved" his patients by giving up practice and three years later after a brief illness he passed away in full serenity of mind and heart.

JAMES MARION SIMS: MEDICAL PIONEER*

WINGATE M. JOHNSON, M.D.,
Winston-Salem, North Carolina.

In Dr. Hall's invitation to address the Richmond Academy of Medicine, he stated that the guest speaker was to talk "about some phase of his own selection of the History of Medicine or about some individual who had something to do with the History of Medicine." My mind immediately turned to one of my own favorite medical heroes; and the opportunity to talk publicly about him, together with the honor of being chosen for such an occasion, overcame my better judgment. I accepted before there was time to think it over, and to realize that the little spare time to be wrested from four busy weeks was not enough to do justice to my subject. There is this consoling thought, however: if my address falls too far short of whatever anticipations some of you may have had, your Virginia courtesy and tolerance will, doubtless, temper your criticism; if it is too brief for the importance of this occasion, you will remember the brevity of time allotted for its preparation; and if it is too long, I can say with Pascal that I had not time to make it shorter.

Many years ago, while browsing around that book lovers' paradise, Leary's Old Book Store in Philadelphia, I came across a copy of *The Story of My Life,* by J. Marion Sims, and purchased it without delay. Since then it has been read and reread, until it is almost ready to fall apart; but it has never lost its fascination. From the first chapter one can hardly fail to be impressed with the two chief charms of the book: the genuine modesty of the author and the simple, clear style of his writing. It is written just as one can imagine he would have talked, with the absolutely natural style that is the goal of every professional writer.

That the book is written hastily is apparent from the number of discrepancies in it, which would almost certainly have been caught by the author with a careful re-reading. For example, Sims said in one place that Dr. Holbrook of the Charleston Medical School had only one equal as a teacher of anatomy, "and that was Ballou, of Jefferson Medical College." In the very next chapter, he wrote: "Professor Patterson (of Jefferson) was the best lecturer on anatomy then living. The next best to him was Hurlburt, of the Charleston College." The date of his marriage he gave as December 21, 1836; and on the same page he said that after their marriage he and his wife "spent the year 1836 at Mount Meigs."

These minor oversights are mentioned not by way of criticism, but as evidence that the book was written hurriedly. Most writers constantly have to remember Robert Louis Stevenson's admonition, "Easy writing makes hard reading; hard writing makes easy reading," which he probably borrowed from Sheridan's couplet:

> You write with ease to show your breeding,
> But easy writing's cursed hard reading.

One who has to write the hard way must envy Sims's style—easy writing which makes easy reading.

Dr. Sims tells us that many of his friends had urged him to leave notes of his life; but it remained for a little sick girl to persuade him to begin the task in earnest, and to influence the form of it.

"In May and June, 1883, I had under my professional care a very dear young friend, whom I had known from early girlhood. She had been an invalid for a long time, and was a bed-ridden sufferer. I made her frequent visits daily, as I saw that moral management was of great importance in the treatment of her case. During one of these social visits, when I was in the habit of drawing her away from herself by talking of topics of the day, she asked me a question about myself; when I replied, 'Oh, that is one of my life stories. You know life is a series of little stories which, when all strung together, make the complete story of the life. I have no time today, but tomorrow I will tell you all about it.' When the morrow came, and the story was told, she asked other questions of a personal character. And thus she catechised and cross-questioned me, day after day, and at last she even wished me to tell her the story of my courtship and marriage. At this I rebelled; but she insisted, and so she had her own way. It all ended in my agreeing to write out the life-notes in their smallest details. I am now surprised to see what an influence this poor little sick girl exerted over me in this

*Presented before the Richmond Academy of Medicine on March 9, 1943, as guest speaker for the Section on History of Medicine.

regard; for, if I had done this work five years ago, I would only have given an account of my struggles and successes, and left out the inner man, the personal life.

"I have now made a long apology for promising to write this life. But I have felt recently more justified in it by Mr. Ruskin's preface to 'The Story of Ida.' He says: 'The lives we need to have written for us are of the people whom the world has not thought of—far less heard of—who are yet doing most of its work, and of whom we may learn how it can best be done.'

"It is a trite saying, that 'every life is a poem, be it long or short.' Mine has been a real romance, full of incident, anxiety, hope, and care; some disappointments, and many successes, with much sickness and sorrow; but it has also been full of joy, contentment, and real happiness."[1]

James Marion Sims was born January 25, 1813, in Lancaster County, South Carolina—the same county that disputes North Carolina's claim to the nativity of Andrew Jackson. The first departure from absolute modesty occurs in the narrative when he lets the reader know that "the ancestors of my father, John Sims, were of the English colonists of Virginia," and that his paternal great-grandfather, Sherrod Sims, was born in Virginia in 1730. His mother, Mahala Mackey, was of Scotch-Irish origin.

John Sims never had a day's schooling until Marion was six months old—and then went to school for only six months. As is so often the case, the father's lack of education made him appreciate its advantages all the more, "and so," in Sims's words, "he began with me at an early age." When only six years old, young Marion was sent to a boarding school "some six or eight miles from home", kept by a one-eyed Irishman named Quigley, aided and abetted by his two daughters. It was a true counterpart of Squeers's Dotheboys Hall. The amiable Quigley made it an invariable rule to initiate every new boy with a flogging, "and when he began he seldom stopped until the youngster vomited or wet his breeches."

Little wonder that his experience here led Marion to conclude "that the best place for a child under ten years of age is with his mother."

His next school was taught by another Irishman, John E. Sanderson, who was also "very cruel, and whipped the boys often without any provocation at all," except on Monday. "He always got drunk on Saturday night, remained so all day Sunday, and came to school Monday morning as full as he could be, and then was always jolly and good-tempered. He would then pinch the girls' arms, and say witty things to the boys, and he never whipped anybody on Monday, so we were always happy on that day. But when Tuesday arrived he reverted to his old ways of severity."

Parents had to put up with Sanderson's cruelties to their children because he "was the only teacher in the county, and if a boy didn't go to school to him there was no school for him to go to."

In 1825 the family moved to Lancaster, and John Sims, together with other citizens, raised a fund to build a high school in the village, which was called Franklin Academy. A Pennsylvanian, Henry Connelly, was secured as its first principal. He was an excellent teacher, albeit also a strict disciplinarian. Marion admits that he lied to him on one occasion. He had placed a large pin in the master's seat, for the benefit of a model student who had the habit of sitting there studying while the others were out playing. On this day the boy stayed outdoors, and the teacher sat on the pin, but "flew up like a rocket." White with rage, he began the old process of asking each student in turn if he were guilty. All, including Marion, plead not guilty. His comment was, "I always felt sorry that I had to lie, but I can not say I have regretted so much that I did." One is reminded of the little girl's definition of a lie as "an abomination in the sight of the Lord and an ever present help in time of trouble."

After two other principals had followed Mr. Connelly, young Sims and five other boys were ready in 1830 to enter the sophomore class of South Carolina College at Columbia, later the University of South Carolina. Before going to Franklin Academy, Marion had tried to persuade his father to let him forego any further education and get a job as clerk in a store. John Sims "said, no; that his own education was so entirely wanting, he knew how important it was for every man to get along in the world, and he was determined to give his children a good education, if he did nothing more for them, and that was better than money." Six months after Marion entered South Carolina College, he grew homesick, and decided to relinquish his college

course and help support the family. He left college and went home, only to be chased back promptly by his mother—his father being away from home at the time.

Soon after he got to college, he was invited to an oyster supper where wine was served, and had the mortifying experience of being made quite drunk by one small glass of Madeira. He made a conscientious effort to increase his tolerance, but in vain. After being carried back to the college several times as a result of the minimum social drink, he gave up and remained a teetotaler the rest of his life. He did, however, learn to play whist, and indulged in two or three games a week. Later on, his friend, Dr. Thornwell, when interceding for him with the mother of his sweetheart, said, "I was in college with Marion Sims, and I know that he was a fellow of good morals. He swears a little bit occasionally, but he can be cured of that."

Sims was graduated in the class of 1832. He said that the class of 1831 "possessed more talent in it, and men of more promise, than any other half-dozen classes that had been turned out of it since its foundation." The great Presbyterian minister, Dr. James Henley Thornwell, was first honor man in this class. "Thornwell was the great orator of the society, and he was such a giant in intellect that, when it came to the discussion of a subject, he overrode everything with the strong will of his mighty genius, and everybody else seemed to be a mere pygmy in his grasp. Thornwell was perhaps one of the greatest intellects that the South Carolina College has ever produced, and second only to John C. Calhoun."

Dr. Hall has reminded me that a grand-daughter of Dr. Thornwell, Mrs. Edwin S. Reid, lives in Richmond.

In passing, it may be of interest to note that Dr. Thornwell intended to practice law, and that his conversion from the law to the ministry—certainly a great change—was due to the influence of the beautiful sister of a schoolmate, who "was a rigid member of the Presbyterian church." Even though she influenced his career so greatly, however, she did not marry him. Thornwell subsequently became president of the South Carolina College and of the Theological Seminary.

In contrast with its predecessor, Sims says that his own class of 1832 "represented the other extreme, and was equally conspicuous for its want of talent." Of himself he says, "I never was remarkable for anything while I was in college, except good behavior. Nobody ever expected anything of me, and I never expected anything of myself."

Apparently Sims was one of those individuals who mature late—whose adolescence is prolonged well past the voting age. He also, by his own admission, suffered until well into maturity from an inferiority complex. His choice of a profession was the result of this inferiority complex. Let him tell this story in his own words:

"There was no premonition of the traits of a doctor in my career as a youngster; but it was simply in this way:

"At that day and time, the only avenues open to a young man of university education were those of the learned professions. A graduate of a college had either to become a lawyer, go into the church, or to be a doctor. I would not be a lawyer; I could not be a minister; and there was nothing left for me to do but to be a doctor—to study medicine or to disgrace my family; for it was generally thought that a man who had gone through college, and came back and settled down as a merchant's clerk, couldn't have had much in him if he didn't take to a profession. So there was nothing else left for me but to study medicine. One day my father said, 'I guess you had better go down and see Mr. Howard about your beginning your studies with him.'

"I said: 'Father, I know that I have been a great disappointment to you. I knew from the outset that you wanted me to become a lawyer. It is impossible for me to be a lawyer; I have neither the talent nor the gifts necessary for the profession. I can not enter Mr. Howard's office.' He said: 'What in the world are you going to do, then?'

"I said: 'If I hadn't gone to college I know what I should have done. I would have accepted Mr. Stringfellow's offer of three hundred dollars a year, and gone into his store two years ago, and by this time I should be getting five hundred dollars a year. But as it is, I suppose I must study a profession, so long as I have had a university education, and there is nothing else left for me but the study of medicine, if I *must* take a profession.'

"He said to me: 'My son, I confess that I am disappointed in you, and if I had known this I certainly should not have sent you to college.'

"I replied: 'I did not want to go; I knew that you were not able to send me there, and I knew that you would be disappointed, and that I should make you unhappy. I am sure that you are no more unhappy about it than I am now. But if I must study a profession, there is nothing left for me to do but to study medicine.'

"He replied: 'Well, I suppose that I can not control you; but it is a profession for which I have the utmost contempt. There is no science in it. There is no honor to be achieved in it; no reputation to be made, and to think that *my* son should be going around from house to house through this country, with a box of pills in one hand and a squirt in the other, to ameliorate human suffering, is a thought I never supposed I should have to contemplate.' "

However, the father swallowed his bitter disappointment and sent him to arrange to "read medicine" with Dr. Churchill Jones, who was the leading practitioner of Lancaster, but whose appetite and capacity for alcoholic beverages greatly exceeded his young pupil's. He had, however, marked surgical ability, and doubtless this influenced Marion's career.

In November, 1833, Marion entered the year-old Medical College of South Carolina at Charleston. Here he studied from the middle of November until the last of February, when the first "year" of his medical course was finished. For the second "year" he went to Jefferson Medical College, in Philadelphia. Here the course lasted five months—from the first of October to the first of March.

While he was at Jefferson, there occurred what Sims, in a model of understatement, called "a most unfortunate thing". A patient who had died of smallpox was brought into the dissecting room, and as a result quite a number of the students contracted the disease. Two or three of these died. Evidently vaccination, although known at this time, was by no means commonly practiced. Young Sims sat up with a friend from Alabama, named Lucas, the night before he died. Fortunately, he himself had been vaccinated some years before, and so escaped infection.

Marion graduated on the first day of March, 1835—after approximately eight months of medical training, exclusive of Dr. Churchill Jones's tutelage. Can one wonder that he said, "When I graduated, I felt absolutely incompetent to assume the duties of a practitioner."? By way of post-graduate instruction he, with thirty or forty others, took a private course of lectures advertised by Professor Patterson on "Regional Anatomy and Surgical Anatomy". He says: "When I graduated I presume I could have gone into the dissecting-room and cut down upon any artery, and put a ligature around it, but I knew nothing at all about the practice of medicine. . . . I had had no clinical advantages, no hospital experience, and had seen nothing at all of sickness."

His father rented an office for Marion on Main Street, and he had a long tin sign painted for it. After waiting two or three weeks, he received his first call, to see a baby with "summer complaint". True to his surgical bent, he lanced the infant's gums; but that was all he knew to do. However, he told the mother to send someone to his office in an hour, when he would have medicine ready. Then he hastened back to his office, took from his seven-volume library Eberle's treatise on "Diseases of Children," turned to the discussion of Cholera Infantum, and read it through. Before little Jennie came, he had compounded the first prescription given in the article. When he found the baby no better next day he tried the second prescription. This process was repeated day after day, as the baby continued to grow weaker. Before the last prescription was reached, the baby died. Young Dr. Sims attended the funeral, and was the chief mourner of all.

Two weeks later, another man came and asked that Marion go to see his baby—adding, "I hope you will have better luck with it than you did with Andy's baby." To this Marion replied, "Elias, if I don't, I'll quit the town." This time he began at the end of the chapter in Eberle and worked forward; but the result was the same. This baby also died. Again the young doctor was chief mourner at the funeral. Then he tore down the long tin sign from his office door and dropped it down an old abandoned well.

"I was then so demoralized," he said, "and so disgusted with my beginning in the profession, that if I had had money enough, or any money at all, even the small sum of five thousand dollars, I would not have given another dose of medicine. But there was no other alternative for me. Being obliged to continue in the profession that I had started in, I

was determined to make up my deficiency by hard work; and this was not to come from reading books, but from observation and from diligent attention to the sick."

The one bright recollection in this dark phase of Dr. Sims's life was the case of "old Captain McKenna, the village rich man. He would go on terrific sprees, ending in delirium tremens." After one such spree had reached its logical conclusion, he sent for Sims, who "attended him very carefully for two days and nights," and was rewarded with a ten-dollar bill—his first professional fee, and the only money he ever got in Lancaster. His sage comment has been repeated over and over again by every veteran physician: "The patients that ought to have lived died, and the ones that ought to have died got well."

Since he could no longer face the music in Lancaster, Sims decided to go to Marengo County, Alabama. Accompanied by his father, he started on the thirteenth of October. (Incidentally, Sims regarded the thirteenth as his lucky day, and also Friday.) In three weeks they had reached Mount Meigs in Montgomery County, Alabama. Here the welcome from a number of friends who had previously moved from South Carolina was so cordial that he decided to locate there. His first call was to see, in consultation, the daughter of a wealthy planter, Mr. Benjamin Baldwin. He shrank from going, and advised that a doctor be called from Montgomery. He was finally persuaded to go, however, and states naively that Mr. Baldwin "was glad to see me, and welcomed me as if I had been a real doctor." The patient was quite ill, but Sims tactfully agreed with the therapy of the family physician, Dr. Bronson. He remained several days, going through the formality of consulting with Dr. Bronson two or three times a day, and meanwhile enjoying the society of the patient's charming sister and her first cousin.

Just before he left, he was asked to see a Mr. Adams, "Mrs. McElroy's overseer", who had been sick for more than two weeks. Again he demurred, on the ground that he was too young and inexperienced, but his objection was over-ruled. When he entered the room, the sick man greeted him, "My God, Evans, do you call that thing a doctor? Take him away; take him away. I have got no use for such a looking man as that. I am too sick a man to be fooled with. Take him away."

Profiting by the Scriptural proverb, Sims won the sick man's good will by giving him a soft answer, and had from him a minute account of his illness. He left without prescribing for him, however. Four weeks later, he was again summoned to see Mr. Adams, who had steadily grown worse, although eight or nine other doctors had seen him in the meantime. This time he examined him and found a large, fluctuating mass on the right side of the abdomen. Very simply he stated his findings: " 'There is matter here, and it must come out, or this man will die. It will have to be opened and come out.' Mr. Adams said, 'But how can that be so, when so many doctors have seen and examined me, and none of them have found it out?'

"I said: 'Of this I am sure. I am not much of a doctor, but when it comes to seeing and feeling and handling things, I know something, and I know that there is matter in this belly, and it either comes out or you will die.' "

The operation is described thus: "We went into the room—it was before the days of anesthetics—and, pulling out a bistoury, I plunged it into his belly. I think it was one of the happiest moments of my life when I saw the matter flow and come welling up opposite that bistoury. It discharged two quarts of matter at once, and continued discharging for two or three days. A few days after that Mr. Adams was able to walk out, and a week after he rode over to Mr. Dick's, seven miles, and dined."

Naturally this operation and its successful outcome helped establish young Dr. Sims's professional reputation. He had uncovered his natural talent for surgery, and his self-confidence began to increase.

In the spring of 1836 he joined a volunteer company from Mount Meigs in an expedition against the Creek Indians. The company was gone five weeks—fruitful weeks for Sims. As he said, "I went into that command perfectly unknown, and a boy in appearance, but a man in spirit; and I came out of it with one hundred and twenty friends. All of the command were devoted friends of mine and to me. It laid the foundation of my popularity so deeply that I was soon sent for as the doctor for all the fellows that had been with me in that little excursion into the Creek Nation."

He soon had all the practice he could handle; but unfortunately became himself infected with the prevalent malaria. His colleague, Dr. Lucas, came to see him and wanted to bleed him, but was politely refused. When he had been sick for two weeks, and was steadily growing weaker, a young English druggist, named Coster, who had become acquainted with him during the expedition against the Creek Indians, came into Mount Meigs with a supply of quinine just in time to save his life. Apparently this was the first case in the community treated by full doses of quinine. Soon afterward, according to Sims, "The writings of Fearne and Erskine, in Alabama, were the first to throw light upon the proper method of treating malaria and malarial fevers. Until their day, the doctors were in the habit of bleeding and physicking people until the fever disappeared, and then giving them quinine, a grain or two, three times a day."

After more than two months of tedious convalescence, Sims had recovered sufficiently to return to Lancaster and marry his childhood sweetheart, Theresa Jones, the daughter of Dr. Bartlett Jones, and the sister of Dr. Rush Jones. (The grandfather of the late Dr. Abe Jones, of Walnut Cove, N. C., was a brother of Dr. Bartlett Jones. Both of Dr. Abe Jones's sons practice in Winston-Salem, and are graduates of the Medical College of Virginia.) They were married on December 21, 1836, by the brilliant Dr. Thornwell, who was then pastor of the Presbyterian Church in Lancaster, and who had interceded for his old friend when Theresa's mother did not think Marion quite good enough for her daughter and objected strenuously to the match.

The young couple returned for a year to Mount Meigs, but in 1837 a Dr. Blakey made Marion an attractive offer to go into partnership with him in Cubahatchee, Macon County. Here he and his wife lived in a two-room log cabin, where their first two children were born.

Then, after he had been in practice three and a half years, he did an amazing thing. A man whom he had known at his Philadelphia boarding house offered him, without any money consideration, an equal partnership in a large clothing house to be established in Vicksburg, Mississippi, and financed by a group of Philadelphia capitalists. Impetuously he decided, "What is the use of my struggling here always, for two thousand or three thousand dollars a year, with no prospect of advancement in life, when such an offer comes to me unsought and unsolicited?" He told Dr. Blakey of the offer, sold his little home for $400, and was getting ready to leave for Vicksburg when the news came that "the whole thing had exploded." Dr. Blakey was happy to have him remain, but he had to move into another house. He "went back to work again and in real earnest, giving up all ideas of getting rich fast."

This episode is further proof of Sims's delayed adolescence. He himself says: "I am an example of a man who has never achieved the ambition of his early life. My successes have been in a direction that I never dreamed of when I started. I had no particular interest in my profession at the beginning. I studied away at it, and at the end of five years had become quite a respectable physician, and, I can say, a tolerably successful one. Still, I was really ready, at any time and at any moment, to take up anything that offered, or that held out an inducement of fortune, because I knew that I could never make a fortune out of the practice of medicine. I, of course, never dreamed of making any other than a local reputation."

After going back to work in earnest, he acquired a large practice, but managed to mix pleasure with business. Wherever he went, he carried his gun and bird dog with him, and rarely returned from his day's round of visits without a partridge, squirrel, or duck. He says that he was perfectly happy. "I had a beautiful wife, two lovely children, and was making three thousand dollars a year. There was never a fellow so happy as I, and I expected to remain there forever."

During his fourth year in Cubahatchee—in 1840—his earthly paradise was ended by a severe malarial infection, which he observed was common "in new countries, West and South, . . coming from a decomposition of vegetable matter in alluvial soils." His illness was so severe that his life was despaired of. Again he was saved by effective doses of quinine, this time given by a Dr. Holt, one of the leading practitioners of Montgomery. He had no more than gotten on his feet again, however, when his wife, both children, and the servants were attacked, and he himself had a recurrence. The whole family were so miserable that he and his wife decided to leave the community.

This time he located in Montgomery, though with

much misgiving. His inferiority complex was still at work, and he said of himself, "I am nothing but a little country doctor, from the pine woods, with no money and no reputation." However, his family "were all completely malarialized and demoralized," and he was desperate enough to take the chance. In twelve months he had had seventeen different attacks, and his family had also suffered.

In Montgomery he was given a warm welcome by the other doctors, and soon made to feel at home. He paid his adopted home a great compliment when he said, "I never saw a town where there was so little bickering and jealousy between doctors. A few valuable and able men at the head of the profession kept the others in the proper line."

When Sims went to Montgomery, he gave away his dog and sold his gun, and "never loaded and shot a gun" thereafter. His adolescent period ended when he was twenty-eight years old, and he entered upon a vigorous maturity. His practice grew steadily, and his surgical ability was soon recognized. He was the first surgeon in the South to operate successfully for club foot, and one of the first to operate on crossed eyes. He had established quite a reputation as a surgeon before he wrote anything for a medical journal. His first literary effort was a report of a successful operation for a double hare lip. This was done at the earnest request of Dr. Harris, of Baltimore, founder of the Baltimore College of Dental Surgery, and editor of the *Journal of Dental Surgery*. While on a visit to Montgomery, Dr. Harris heard of the operation and persuaded Sims to write an account of it for his journal. When the journal containing the article appeared, the author bashfully hid it behind some large books in his library. To his chagrin, Dr. Ames, the leading practitioner and most prolific writer of Montgomery, came in his office, walked straight to the book-case, pulled out the book concealing the Dental Journal, and read the article through, while Sims stood trembling like a schoolboy. When he had finished reading it, Ames said, "What would I give if I had the faculty of expressing myself in writing like that?"

With Ames's encouragement, Sims began to contribute regularly to medical journals. His comment on the incident is characteristic: "So it was that I always felt timid about writing, and never dreamed that I could write until the circumstance related, in connection with my friend Dr. Ames. Even to this day the finding of that 'Dental Journal' is inexplicable to me. I do not believe there are any accidents in this world. I do not look upon that as an accident, but as a Providential affair."

Although he was a successful family practitioner, Sims abhorred obstetrics, and "never pretended to treat any of the diseases of women, and if any woman came to consult me on account of any functional derangement of the uterine system, I immediately replied, 'This is out of my line; I do not know anything about it practically, and I advise you to go to Dr. Henry or Dr. McWhorter.' "

Little did he know that he was destined to become the founder of modern gynecology! "Lord, we know what we are, but know not what we may be."[2] The evolution of the gynecologist began on this wise: After ten years of practice he encountered his first case of vesico-vaginal fistula in Anarcha, a 17 year old Negro girl, who had had a prolonged labor. Within two months he had seen two other such cases. A careful search of the literature gave no help to him or his patients except the doubtful comfort that this horrible affliction was rarely fatal. Just after he saw the third patient, he had an urgent call to see a woman who had fallen from a runaway pony with all her weight on the pelvis. She was complaining of great pain in her back and a tenesmus in both bladder and rectum. Sims writes: "If there was anything I hated, it was investigating the organs of the female pelvis. But this poor woman was in such a condition that I was obliged to find out what was the matter with her. It was by a digital examination, and I had sense enough to discover that there was retroversion of the uterus. It was half turned upside down, and I took it for granted that this sudden dislocation, or disturbance of the pelvic organs, was the result of the fall on the pelvis. The question was, what I should do to relieve her."

Remembering how a former teacher had told his class to treat a sudden retroversion of the uterus, he placed the patient in the knee-chest position and with two fingers in the vagina, began pushing against the cervix with all his might. All at once, he said, he could not feel anything, either the uterus or the sides of the vagina. While he was wondering what it all meant, the patient said, "Why, doctor, I am relieved." As she lay down on her side,

"there was," in Sims's words, "an explosion, just as though there had been an escape of air from the bowel. She was exceedingly mortified and began to apologize, and said, 'I am so ashamed.' I said: 'That is not from the bowel, but from the vagina, and it has explained now what I did not understand before. I understand now what has relieved you, but I would not have understood it but for that escapement of air from the vagina. When I placed my fingers there, the mouth of the vagina was so dilated that the air rushed in and extended the vagina to its fullest capacity, by the natural pressure of fifty-five pounds to the square inch, and this, conjoined with the position, was the means of restoring the retroverted organ to its normal place.'

"Then, said I to myself, if I can place the patient in that position, and distend the vagina by the pressure of air, so as to produce such a wonderful result as this, why can I not take the incurable case of vesico-vaginal fistula, which seems now to be so incomprehensible, and put the girl in this position and see exactly what are the relations of the surrounding tissues? Fired with this idea, I forgot that I had twenty patients waiting to see me all over the hills of this beautiful city. I jumped into my buggy and drove hurriedly home. Passing by the store of Hall, Mores & Roberts, I stopped and bought a pewter spoon. I went to my office where I had two medical students, and said, 'Come, boys, go to the hospital with me.'

" 'You have got through your work early this morning,' they said.

" 'I have done none of it,' I replied; 'come to the hospital with me.' Arriving there, I said, 'Betsey, I told you that I would send you home this afternoon, but before you go I want to make one more examination of your case.' She willingly consented. I got a table about three feet long, and put a coverlet upon it, and mounted her on the table, on her knees, with her head resting on the palms of her hands. I placed the two students one on each side of the pelvis, and they laid hold of the nates, and pulled them open. Before I could get the bent spoon-handle into the vagina, the air rushed in with a puffing noise, dilating the vagina to its fullest extent. Introducing the bent handle of the spoon I saw everything, as no man had ever seen before. The fistula was as plain as the nose on a man's face. The edges were clear and well-defined, and distinct, and the opening could be measured as accurately as if it had been cut out of a piece of plain paper. The walls of the vagina could be seen closing in every direction; the neck of the uterus was distinct and well-defined and even the secretions from the neck could be seen as a tear glistening in the eye, clear even and distinct; and as plain as could be. I said at once, 'Why can not these things be cured? It seems to me that there is nothing to do but to pare the edges of the fistula and bring it together nicely, introduce a catheter in the neck of the bladder and drain the urine off continually, and the case will be cured. Fired with enthusiasm by this wonderful discovery, it raised me into a plane of thought that unfitted me almost for the duties of the day. Still, with gladdened heart, and bouyant spirits, and rejoicing in my soul, I went off to make my daily rounds. I felt sure that I was on the eve of one of the greatest discoveries of the day. The more I thought of it, the more I was convinced of it.

"I immediately went to work to invent instruments necessary for performing the operation on the principles that were self-evident on the first inspection of the first case. The speculum, or retractor, was perfectly clear from the beginning. I did not send Lucy home, and I wrote to her master that I would retain her there, and he must come and see me again. I saw Mr. Wescott, and I told him that I was on the eve of a great discovery, and that I would like to have him send Anarcha back to my hospital. I also wrote to Dr. Harris, saying that I had changed my mind in regard to Betsy, and for him to send her back again. I ransacked the country for cases, told the doctors what had happened and what I had done, and it ended in my finding six or seven cases of vesico-vaginal fistula that had been hidden away for years in the country because they had been pronounced incurable. I went to work to put another story on my hospital, and this gave me sixteen beds; four beds for servants, and twelve for the patients. Then I made this proposition to the owners of the negroes: If you will give me Anarcha and Betsy for experiment, I agree to perform no experiment or operation on either of them to endanger their lives, and will not charge a cent for keeping them, but you must pay their

taxes and clothe them. I will keep them at my own expense. Remember, I was very enthusiastic, and expected to cure them, every one, in six months. I never dreamed of failure, and could see how accurately and how nicely the operation could be performed."

After three months of preparation, he operated first on Lucy. It was before anesthesia had come into use, but the poor girl, on her knees, bore the operation—which lasted about an hour—with great bravery. About a dozen doctors came to witness this epoch-making operation, all glad to assist. To Sims's disappointment, the operation did not succeed, though the fistula was made much smaller. Another operation was performed on Betsey, but it, too, failed. The size of the fistula was greatly reduced, but the urine continued to escape from the bladder. Patiently Sims repeated the operation over and over, continually modifying his technique; but after four years had passed, success seemed no nearer than at first. The expense of keeping the patients was an enormous tax. The other doctors in Montgomery, who at first were anxious and willing to help, grew tired. His brother-in-law, Dr. Rush Jones, begged him to give up the effort. However, he trained the patients to assist him in operating on other patients and kept on trying. At long last a combination of fine silver wire sutures threaded on perforated shot made the thirtieth operation on Anarcha a success.

While these experiments were in progress, Dr. Sims said, "I had all the practice I could attend to, and more than I ought to have attempted. Many a time I said to my wife: 'We are too happy; I have never seen a man in my life that was satisfied with his surroundings, but I am perfectly satisfied, and have nothing more in this world to desire. I am happy in my home, in my wife and children, in my friends, in my position, in my prospects for the future. I am perfectly content, and nothing could induce me to leave Montgomery. I have no ungratified ambition or desire.' "

This happy state did not last long. In 1848 their three-year-old son died of diarrhea. Six weeks after his first successful operation for vesico-vaginal fistula, Dr. Sims contracted the malady that finally forced him to leave Montgomery to live in New York. Dr. James K. Hall thinks it was pellagra, and that is certainly a logical diagnosis. Dr. Sims speaks of it as a chronic diarrhea, and said that it was endemic all through the Valley of the Mississippi. He wrote: "When you see in the South a man in vigorous health and middle life gradually wasting away, and at the end of eighteen months drop as a skeleton into the grave, you may take it for a positive fact that he has died of chronic diarrhoea." Later he stated that his throat and tongue were so ulcerated that he could hardly speak; but he does not mention having the skin manifestations of pellagra.

A visit to Cooper's Well, in Mississippi, gave him temporary relief; perhaps also the winter season helped. There was a recurrence in the Spring, which was not cured by a second visit to Cooper's Well. In his search for health, he tried the famous Rockford Island Springs, near Lexington, Virginia. If this water had proved successful, Marion Sims might have practiced in Richmond. Finally, in May, 1853, he, with the backing of his wife, took the heroic step of going to New York to live, since he had found that the climate there agreed with him better than any other.

The reception given him by the medical profession of New York was in marked contrast to the generous welcome extended by the doctors of Montgomery. The *American Journal of Medical Sciences* had published his article on the treatment of vesico-vaginal fistula, and his reputation had preceded him. The leading surgeons of the city called on him, and soon Dr. Buck—he of the extension apparatus fame—invited him to bring his instruments and help operate on a patient with vesico-vaginal fistula. The operation was successful, although Dr. Buck had failed several times previously. A week or so later, Dr. Buck borrowed the instruments again, but this time did not invite Dr. Sims to the operation. Soon he and other surgeons were performing Sims's operation, and he himself was left out in the cold. He said to himself, " 'I'm a lost man unless I can get somebody to create a place in which I can show the world what I am capable of doing.' This was the inception of the idea of a woman's hospital. If the profession had received me kindly in New York, and acted honorably and gentlemanly and generously toward me, I would not have thought of building a woman's hospital. Some people have given me the credit of coming to New York with the ex-

press purpose of establishing a great hospital devoted to the diseases of women and their treatment. When I left Alabama for New York I had no idea of the sort in the world. I came simply for a purpose, the most selfish in the world—that of prolonging my life. I saw that I could not live in any other place than New York, and for that reason, and no other, I came."

When he decided to leave Montgomery for New York, Dr. Sims had sold his house and interest in the drug store. Most of the money received for these went into a house at 89 Madison Avenue. During this period of waiting his wife kept boarders and so virtually supported the family. He had still not entirely recovered from his illness, and the cold reception given him by the New York doctors was most depressing. The little balance left from the purchase of his house was almost exhausted. Just when everything seemed darkest, help came from an unexpected quarter. He happened to meet a former patient from Montgomery, named Beattie, who naturally inquired how things were going. When Sims told his melancholy story, Beattie replied that he knew the very man who could help him. The next day he arranged a meeting with this man, Henri L. Stuart, a newspaper reporter—"a tall man, with thin, brown reddish hair, a wax nose . . . a man of great intelligence, great energy." After hearing Sims's story, Mr. Stuart took complete charge of the situation and outlined his campaign thus: "We will rent Stuyvestant Hall; we will advertise in the newspapers for the doctors to attend a meeting, which is to be addressed by Dr. J. Marion Sims, late of Montgomery, Alabama, on the necessity of a hospital in the City of New York for the treatment of the diseases of women. We will invite all the leading doctors in town by special cards, and they will come to hear you, and will be wise enough to indorse what you have to say. If you tell your story to the crowd of doctors that I will get there, as you have told it to me, we will carry the day. If you don't make the d—dest failure that a man ever made in this world, or can make, in one month from now, instead of being a beggar, as you make yourself out, you will be dictator, and command the situation entirely.' "

The plans were carried out to the letter. On the day before the meeting—in May, 1854—Mr. Stuart, with Dr. Sims in tow, visited all the leading newspaper editors in New York, beginning with Horace Greeley, and got permission from every one to insert a notice of the meeting. In spite of a hard rain, the hall was almost filled. After Dr. Sims had spoken on the necessity for a hospital for women, a committee was appointed to carry out the plan for establishing such a hospital.

After the medical profession's public endorsement of the hospital, Mr. Stuart's next step was to have Dr. Sims interview a number of the leading women of the city. By dint of dogged perseverance, and in spite of the undercover opposition of Drs. Watson, Buck and Company, Sims finally saw his dream come true. In May, 1855—two years after he came to New York, and one year after the Stuyvestant Hall meeting—the Wôman's Hospital was inaugurated at 83 Madison Avenue. Sims said that the hospital "from the day it opened had no friends among the leaders—among hospital men. I was called a quack and a humbug, and the hospital pronounced a fraud. Still it went on with its work. Its wards were open to any doctor that cared to come, and the operations performed there were seen by most of the leading medical men in the city, and many others from different parts of the country."

When the hospital was opened, Dr. Sims was still far from well, and could perform only one operation a day at first. Within six months, however, he had gotten rid of his malady for good, after being plagued with it for six years, and was so busy that he had to have an assistant. Dr. Thomas Addis Emmet was chosen for the position.

From this time on the story of Sims's life is more cheerful. He soon was having all the private practice he could do, his health remained good, and his fame continued to spread. The Woman's Hospital soon had to be enlarged, so another building, occupying a whole block, was erected between 49th and 50th Streets and Lexington and Fourth Avenues.

In June, 1861, Sims made his first trip abroad—partly for rest, partly to investigate hospital treatment in Europe. In Dublin, Edinburgh, Aberdeen, London and Paris he was welcomed heartily. Over and over again he performed his famous operation for vesico-vaginal fistula when suitable patients could be found, while the greatest surgeons of Europe watched him. One often hears an athlete extolled for keeping his nerve in a gruelling competition or before a crowd of spectators; but can one

imagine any athlete exhibiting more coolness under pressure than did the little South Carolinian who became a doctor because he was too timid to be a lawyer or preacher?

In London he had his first fatality from his operation for vesico-vaginal fistula, after having performed it hundreds of times. This, he tells us, was due to the ureters' having been closed by the suture. A second fatality occurred in Brussels later. The post-mortem revealed that the nurse had driven the catheter through the posterior wall of the bladder into the peritoneal cavity—"an accident which would not have happened in the hands of an ordinary nurse accustomed to such cases."

The results obtained by Sims, before the days of antisepsis or asepsis, were remarkable. Surgeons tell me that the vaginal mucous membrane is highly resistant to infection following operations; but Sims also did abdominal surgery.

To digress a little: Dr. Hall, I am sure, remembers with what awe we interns at the old Philadelphia Polyclinic witnessed the technique of the late B. F. Baer and how we marveled at the results he got in spite of this technique. Most of us, I believe, came to realize that the gentleness with which he handled tissues, the speed with which he operated, and the common sense after-treatment made up to a great extent for his total disregard of the comparatively new science of bacteriology. Robert T. Morris[3] reminds us that "Lawson Tait had presented better statistics than any other abdominal surgeon in the world, at a time when some of us were enthusiastic over antiseptic surgery and he was railing at it . . . he was conserving the natural resistance of his patients through rapid operating and the infliction of a small degree of surgical injury."

Sims returned to New York in January, 1862; but the Civil War was getting well under way, and life in New York for a Southerner was so unpleasant that he recrossed the Atlantic with his family, to stay for the duration of the war. He was so well known now that he had no trouble in making a good living in London and Paris. He stayed for six years, and during this period had among his patients many members of the aristocratic and royal families. One of his patients was the Duchess of Hamilton, who in 1863 "gave me a beautiful chateau to live in, ready furnished, one which had never before been occupied by any but royalty; and here I took up my abode for the summer." Here he wrote his book, "Clinical Notes on Uterine Surgery." Of this work Dr. Thomas Addis Emmet wrote: "Its publication was the turning point of modern gynecology, or more strictly speaking American gynecology, of which he may justly be termed the father."

Sims's own story ends in 1863 while he and his family were still abroad. He lived twenty years longer, however, and reaped many rewards of his hard work and his genius. Only a few highlights of his later career will be given.

In 1870, during the Franco-Prussian War, he returned to France, where he organized the Anglo-American Ambulance Corps, and was made its Surgeon-in-Chief. He rendered such distinguished service, especially in connection with the battle of Sedan, that the French Republic conferred on him the Order of the Knights of the Legion of Honor. As a result of this military experience he wrote ten years later a paper on the treatment of abdominal wounds which, according to surgeons like Dr. Hubert Royster[4] and Dr. Irvin Abell,[5] placed the treatment of injuries of the abdomen on a modern basis —at least until the advent of the sulfonamides.

In 1874 there came a disheartening experience. With the attitude of omniscience so often assumed by laymen who have occasion to deal with medical matters, the Board of Governors of the Woman's Hospital ruled that no more cancer patients should be admitted to the hospital, and that the number of spectators at any one operation should be limited to fifteen. This number, the Board decided, was the limit that could be tolerated by the modesty of woman. The facts that the woman was soundly anesthetized, and that the visitors were all medical men, were not taken into account, nor do we know why fifteen was selected as the limit of tolerance. In vain Dr. Sims, at the next annual meeting of the hospital officers, eloquently plead for the patient with cancer, and protested against limiting the number of visitors on the ground that it interfered with the teaching function of the hospital and that it invaded the rights of the physician. When the Board was obdurate, he did the only thing a self-respecting doctor could do, and resigned from the staff of his own hospital.

Two years later, in 1876, he was elected president of the American Medical Association, and in

1880, of the American Gynecological Society. In 1881 he was called to attend President Garfield after he was shot by an assassin. That same year his Alma Mater, Jefferson, bestowed upon him the honorary degree of Doctor of Laws.

He died, quietly and without pain, on November 13, 1883, after a full day's work.

In 1894 a statue was erected to his memory in Bryant Park, New York; later this was moved to Fifth Avenue at 103rd Street—opposite the New York Academy of Medicine.

Among the honors conferred upon Sims the Cross of the Legion of Honor from France has been mentioned. He was also a Fellow of the Royal Academy of Medicine in Brussels, a Fellow of the Royal Obstetrical Society of London, an honorary member of the medical societies of Edinburgh, Brussels, Belgium, Berlin, Christiania, Paris and Dublin. He was given the Iron Cross of Germany, the Order of Leopold I of Belgium, and was decorated by the governments of Italy, Spain, and Portugal.

Besides his book, "Clinical Notes on Uterine Surgery," and his autobiography, he left behind about eighty articles on various medical and surgical conditions.

While it is gratifying to know that a Southerner—a son of South Carolina, a great-great grandson of Virginia—attained such heights, it is equally gratifying to know that he remained unspoiled by all the honors and the adulation heaped upon him, and that he obtained his greatest satisfaction from his home and friends. In writing of Trousseau, who was recognized as the leading doctor of Paris, and who had everything to make him happy except for his home life, he recalled the words of a New York minister who had said that Dr. Sims, because of the relief he brought to so many suffering women, ought to be the happiest man in the world. Sims later thanked the minister for his kind words, but added: "Your conclusion that I was one of the happiest men in the world was correct, but your premises were not. I am one of the happiest men in the world, but it is not because I cure these poor people who would never have been cured but for my labors and my discoveries and inventions. It is because I am happy at home."

To the end he retained his simple, childlike faith in God. The letters to his wife which his son included with the autobiography are naturally more self-revealing than the more formal part of the story. A letter to her, written from Paris after one of his greatest surgical triumphs, gives such an insight into the very soul of the man that I shall close with an excerpt from it.

"Not only now, but often while I sit in the midst of the decorated *savants* of this great city, my thoughts turn instinctively to the wife of my bosom, who, as the mother of my children, is a thousand times dearer to me than she was in the spring-time of life, as the playmate of my childhood and the idol of my youth. To your gentle care and loving kindness and wise counsels I owe all that I am, and I feel that, with all my successes, all my triumphs, with the prospect of lasting fame, I am far, very far from being worthy of you; for when I have told you thousands of times that you were too good for me I have been in earnest. But while I feel a secret, unexpressed gratification at the extraordinary result of my visit here, which would not have been made but for your persistent entreaties, let us not forget the great Author of it all. I have done nothing, but have been led along, I know not how, and have followed blindly, confidingly, and patiently. Nothing has been done just as I would have had it, but all has turned out, or is turning out, better than I could have devised."

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RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE IN VIRGINIA*

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For several centuries the term "rheumatism" has been used to designate joint pains and deformities of various types. Gradually "rheumatism" has come into use in connection with polyarthritis, often associated with systemic disease. It was not until the late eighteenth century that it was learned that "rheumatism" or rheumatic fever affected not only the joints, but also the various structures of the heart. It is a very unfortunate fact that until rather recently text-book descriptions of the disease stressed the adult type of polyarthritis with marked joint signs and symptoms. Thus attention was diverted from the most important features of the disease, namely, the mildness of the joint symptoms, the involvement of the heart in nearly every case, and the marked tendency toward recurrence and chronicity.

As rheumatic fever is a reportable disease only in Denmark, Iceland, and Norway, there are no accurate data concerning the general incidence of the disease. However, certain statistics are interesting. Atwater and Swift have estimated that there are about 170,000 cases of rheumatic fever per year in the United States. From his studies Paul estimates that there are about 840,000 cases of rheumatic heart disease, active and inactive.

It is generally accepted that rheumatic fever and rheumatic heart disease have a definitely higher incidence in the colder climates. Two and one half per cent of 4,853 cases admitted to Children's Hospital, Birmingham, Alabama, were definitely diagnosed as rheumatic fever or rheumatic heart disease. However, arthritis in a severe form was rare and arthritis of a mild degree occurred in only a moderate proportion of the cases. Dublin, of the Metropolitan Life Insurance Company, states that death from rheumatic fever alone, between five and nine years, is outnumbered only by those of the four principal communicable diseases of childhood and is greater than that for pneumonia.

Wood *et al* a number of years ago reported that of 300 cases of organic heart disease seen by them in Virginia, 22 per cent were of the "rheumatic" type. Hedley found that in Virginia from 1922 to 1936, the mortality rate from heart disease between the ages of five to twenty-four years was 11.2 per 100,000. We agree with Dr. Hedley that with a rare exception all of these cases are rheumatic heart disease since congenital heart deformities are not listed under heart disease, and since syphilitic, hypertensive, and arteriosclerotic (coronary) heart disease rarely cause death prior to twenty-four years.

In 1940 one of us (Dr. Louise Galvin) made a survey of certain groups of children in Richmond through the Rheumatic Fever Program of the Crippled Children's Bureau. We wish to present the findings, but hasten to add that the data presented serve to give only a general, rough idea of possible heart disease and are in no way considered scientifically accurate. 979 children were examined, and of the 466 white children 11 or 2.3 per cent presented findings indicative of organic "difficulty", whereas of 513 colored children examined 45 or 8.5 per cent presented such findings. Due to certain conditions which we do not think it necessary to go into at this point, practically all of the cases we have seen at the Rheumatic Fever Clinic and/or in the Medical College of Virginia Hospitals have come from Richmond and the three surrounding counties.

From May 1, 1940, to July 1, 1942, we have seen 254 cases referred to us because it was thought that the child possibly had some type of rheumatic fever manifestation, rheumatic heart disease, or rarely congenital heart disease. Of the 254 cases, we made a definite diagnosis of rheumatic fever or heart disease in 97 cases or 34.2 per cent. The diagnosis of possible and potential heart disease was made in 53 or 20.8 per cent of the cases. Thus, 150 or 55 per cent of the cases seen in this special clinic were considered to have either definite rheumatic fever, rheumatic heart disease, or possible and potential heart disease. During this period of time the aver-

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age number of children under our care (not including rheumatic cases on the regular Medical College of Virginia Hospital services, or private practice) suffering from active rheumatic fever has been 54 per month. During the year 1940 the total admissions to the Medical College of Virginia Hospital Division, all ages, were 10,491, and of this number 91 cases or .86 per cent were diagnosed as rheumatic fever or heart disease; for the year 1941 admissions were 12,477, and 102 or .81 per cent were diagnosed as rheumatic fever or heart disease.

Neither the cases of definite rheumatic heart disease, nor the so-called typical rheumatic fever present a really difficult problem. But we do have difficult and very important problems in trying to arrive at a correct diagnosis in cases of border-line rheumatic fever, and of border-line inactive rheumatic heart disease, and last, but in our opinion most important of all, in determining whether or not a given case of rheumatic fever, with or without demonstrable carditis, is in the active or inactive state. We are all familiar with the text-book type of case of acute rheumatic fever. Thus, a child, or less often a person in young adult life, will develop a rather sudden acute infection with painful, swollen, tender, reddened, inflamed joints. Accompanying the arthritis there will be fever, sweating, weakness, malaise, anorexia, nose bleeds (at times), rapid heart rate, systolic and diastolic murmurs, enlargement of the heart, and in a short time anemia and loss of weight. The initial attack may start with the typical nervousness and choreiform movements of chorea or Saint Vitus Dance.

The clinical course of any given case may vary a great deal; however, we wish to emphasize here and later on that it is extremely important to realize that in rheumatic fever, probably better called the "rheumatic state" or "rheumatic infection", the period in which there is obvious evidence of an active infection with arthritis may be very short. But let us not be lulled into a sense of false satisfaction or security. Such a case may run a chronic or subchronic course and turn up 15 or 20 years later with enlargement of the heart, mitral stenosis and auricular fibrillation, indicating typical advanced chronic rheumatic heart disease.

It is our impression, as it is of others, that the manifestations of rheumatic fever here in Virginia are often very atypical and are mild and indefinite. Yet, despite these mild manifestations, we might say perhaps because of the atypical course of the disease here, many cases developed severe unequivocal rheumatic heart disease in later life. We feel that it is very important to look for these atypical cases and even if a definite diagnosis of rheumatic fever and heart disease cannot be made, it is better to treat such cases as rheumatic fever. Without attempting to present any statistics as to the frequency of occurrence of various signs and symptoms among cases seen in our Rheumatic Fever Clinic, we should like to point out certain things we believe are important. Much more often than not the children that we see with suspected or even definite rheumatic fever are not acutely ill. The mother may give a history somewhat as follows: Following a sore throat, but not necessarily so, in about two weeks the child begins to feel badly, lacks its usual energy and tires out quickly. He was found to have a little fever, possibly 101° or 102° Fahrenheit for a few days; this came down to 100° and stayed there. He complained of some pain in his ankles or knees for several days; then this disappeared and there was some stiffness of the joints. He may notice some loss of weight, pallor, and unusual sweating. Further questioning may bring out loss of appetite with rather frequent gastro-intestinal upsets, with pain and vomiting. We have the impression that the initial attacks as well as recurrent bouts of rheumatic infection are very often ushered in by gastro-intestinal upsets with pain and vomiting. This is particularly true in colored children. These children are unfortunately at times operated upon for supposed appendicitis. Nose bleeds, not the ordinary traumatic ones of childhood, definitely occur more frequently in "rheumatic" children than in normal children. We routinely inquire concerning nose bleeds at each visit, just as we do concerning sore throat, colds, and joint pains.

On examining such a child, we may, or may not, *more often the latter,* find some swelling of ankles, knees, or wrists, with a little tenderness on pressure and a little pain and stiffness on motion. He appears underweight and almost always anemic. His temperature may be around 100° to 101° Fahrenheit per rectum and his heart rate elevated out of proportion to the fever, being around 100 to 120 at rest. The heart sounds are hyperactive and various

types of murmurs may or may not be found, depending upon whether or not this is the initial attack and how much cardiac involvement is present. Certain laboratory procedures are of help in doubtful cases. A leucocytosis and an increased sedimentation rate of the red blood corpuscles almost always indicates an active rheumatic infection. An elevated sedimentation rate may be delayed two weeks to two or three months. There are certain changes in the electrocardiogram, especially a prolonged P-R interval, indicating a partial heart block which may be present to help us in our diagnosis. However, a normal electrocardiogram may be present in a heart that is definitely damaged.

We would like especially to emphasize that because of the protean manifestations of rheumatic fever and of the lack of any absolute diagnostic laboratory procedures, we at times have to see equivocal cases repeatedly over long periods of time before arriving at a final positive diagnosis. Because of the nature of the disease, and certainly in the absence of acute polyarthritis or chorea, the final decision will have to await the development of evidence which we consider to indicate rheumatic heart disease, mitral stenosis being the example par excellence. However, if there is strong presumptive evidence that we are dealing with rheumatic fever and other diseases have been excluded, we should like to emphasize again that the child should be treated as having definite rheumatic fever.

Rheumatic fever is a chronic disease, characterized by recurrences. The duration of the rheumatic infection or of rheumatic fever varies a great deal. The active stage may persist for weeks, months, or years. As stated before, it is very difficult at times to determine whether or not a given case is in the active phase. Just as it is important to keep cases with activity at rest, it is important to let cases without activity, even if they have definite heart damage, live as nearly a normal life as they can. Some of the points regarding activity have been covered above; however, we would like to emphasize a few more. We consider as abnormal a rectal temperature above 100° Farenheit. Persistence of fever in the absence of any other cause should make us suspicious of rheumatic fever. The joint signs and symptoms may be very mild and present only in the beginning of the disease, or may recur from time to time. A resting pulse above 100 is considered abnormal and should be carefully investigated and considered as evidence of activity in a known rheumatic. Erythemas are not common in our experience and neither are subcutaneous nodules. However, we occasionally see subcutaneous nodules, and they are generally associated with a severe infection. We have found the weight chart to be of great help and believe that a progressive gain in weight indicates a subsidence of the active phase. Congestive heart failure in a young patient with rheumatic fever practically always indicates a definite activity of the infection, and, furthermore, is a serious prognostic factor. Jones and Bland consider true Sydenham's chorea as "a mild manifestation of rheumatic fever and one in itself not especially conducive to the development of rheumatic heart disease". In the past chorea itself has been considered practically as serious as rheumatic fever with polyarthritis.

From the practical viewpoint we believe that the leucocyte count and the sedimentation rate are the best laboratory procedures. We prefer both tests, but believe, if only one is available, that generally the sedimentation rate gives the greatest amount of information. We use the corrected sedimentation rate.

Without going into the details of treatment in each stage of the disease, we should like to present some of the general principles of treatment of the various phases. In the active phase of the disease, absolute bed rest with an easily digestible high caloric diet is essential. If the patient presents symptoms or signs of joint involvement or of pericarditis, salicylates in adequate dosage are often of great help. If there is evidence of heart failure, usually of the right side but not of the left side, we believe, as do White, Sprague, and Jones that the xanthin and mercurial diuretics along with digitalis should be properly used. In this stage of the disease, if additional medications are tolerated, vitamins and iron are also indicated. After the patient has passed the acute active stage, but is still convalescing, we continue moderated bed rest, vitamin therapy, and iron as indicated. We believe that cod-liver oil, vitamin B in its various varieties, and vitamin C are especially indicated. We might add here that in chronic infections vitamin C seems especially indicated, and that, furthermore, in rheumatic fever

it seems to have an almost specific effect in preventing nose bleeds, possibly by correcting the capillary permeability. When the patient has reached the inactive stage, and whether or not the patient has definite heart damage, we try to emphasize the necessity of periodic examinations, the avoidance of any infections, particularly respiratory ones, and the special care of these infections, the avoidance of competitive athletics, and any and all forms of exercise producing real fatigue. Finally, we emphasize the great importance of care regarding personal hygiene, and the keeping of one's self in the best of health.

DISCUSSION

DR. LOUISE GALVIN,* Richmond: In connection with the paper which Dr. Camp presented, I am glad of the opportunity to say something about chorea, since the paper quoted figures in connection with the importance of chorea as related to heart disease. It has been emphasized by Dr. T. Duckett Jones, and I agree, that heart disease in connection with pure chorea is rare. When a careful history is taken, however, we often find that there have been other evidences of rheumatic fever. In several cases, when we have gone into the history, we have gotten a history of other symptoms at an earlier period—nose-bleed, leg aches (in the calves, particularly), also stiffness and abdominal pains. A history of these things should make us very cautious in examining the heart. Many children will have leg pains, not localized in the joints. for months or maybe two or three years before they have definite localized joint pains; and these pains are probably due to synovitis of the hamstrings, Achilles tendons, etc., due to rheumatic processes. Often a history of leg pains is the only history that the mother will give you, and you have to ask to get the history of stiffness in the joints or pains in other joints, nose-bleeds, abdominal pain, easy fatigue, etc.

DR. J. EDWIN WOOD, JR., Charlottesville: The paper of Dr. Camp and Dr. Galvin is of peculiar interest to me, as for some twenty years I have followed the general problem of rheumatic fever. The importance of this problem in the South has not been fully appreciated.

Although several theories have been offered relative to the cause of rheumatic fever none has been universally accepted.

There are some points of probable interest which Dr. Camp and Dr. Galvin did not have time to bring out. For example, much discussion has arisen with regard to the use of digitalis during the active stage of rheumatic fever with congestive heart failure. Some insist that digitalis has no value, is dangerous and should not be used. This is only partially true. There are instances of rheumatic carditis in which digitalis procures excellent results in the treatment of congestive heart failure. However. the heavy dosage so commonly employed by many of us relative to the usage of digitalis in other heart failure patients does not apply here, and the relatively safe rule of grs. 1 and ½ digitalis (U.S.P.) per ten pounds body weight should be followed with frequent observations for toxic effects.

Lately, from several sources, have come reports of control of rheumatic recurrences with small doses of sulfanilamide administered during winter to children in certain institutions. This method has its dangers and obviously would be impractical in the individual case. Happily, a still more recent article has indicated that the prevention of active rheumatic recurrences in certain juvenile institutions may be accomplished just as well with the continued administration of moderate daily salicylate dosage throughout the winter. The approach has promise for the individual case.

Dr. Camp and Dr. Galvin have reopened an important subject. They have stressed the insidious nature of this infection in the South. I hope their good work will lead to a program of adequate care and rest for the active rheumatic similar to that now enjoyed by the active tuberculosis patient.

DR. F. D. WILSON, Norfolk: I have enjoyed immensely this paper by Drs. Camp and Galvin. We do not have so much rheumatic fever in this section, though probably more than we recognize. But there is not nearly so much as there appears to be in the northeastern section of the country.

I think the present conception of rheumatic fever and endocarditis and chorea associated has enabled us to avoid many mistakes of diagnosis. There are some pitfalls, however, which I should like to bring out. First of all is the vagueness of the disease. Dr. Galvin spoke of leg aches. Mothers usually speak of "growing pains". Growing pains following upper respiratory infection, whether simple coryza or tonsillitis, should lead us to suspect rheumatic fever. If we do, we shall avoid missing some cases.

The age incidence is interesting because it is unusual to find rheumatic fever up to five years of age, and it is very rare up to three. The rheumatic nodules I have seen very rarely. They may be more common, but I have been unable to find them.

Swellings of the joints are so fleeting that they are often passed unnoticed. Often you will see a child with pain in one joint only, and you do not see the jumping about from joint to joint that you see in older people. The swelling is evanescent; it stays a day or two and is gone. Any pain—growing pain—in a child should lead you to suspect the disease. Redness is rare, and also swelling, as I have said. Tenderness, even if not persistent, should lead you to suspect the disease.

There is one thing I think almost all of us are negligent about, and that is in not keeping our patients in bed longer. As soon as they get over the pain and the temperature falls we are apt to want to get them up. I

*Asked by the President to discuss the paper.

am one of those who believe that rheumatic fever patients should never get out of bed under six weeks. I believe the endocarditis cases should never get up in less than ninety days, and often six months or longer. Some of my endocarditis cases have had to stay in bed a year or longer. I believe that is where we do the great damage; we let them get up too soon. I believe we should emphasize the necessity of keeping the patient in bed until he is entirely well, as indicated by his blood picture.

DR. CAMP, closing the discussion: I want to thank the doctors who have very kindly discussed the paper and to say once more that we simply wanted to bring before you the fact that we do have rheumatic fever here in Virginia. It is usually of a mild type. As Dr. Wood said Dr. Hutcheson said to him, we do not know how much good rest does, but it is certainly the best thing we have to offer these patients; and I think the time will come when we shall have an institution for them, just as we have for tuberculosis patients in this State. We have one case who has had active rheumatic fever for four years, and we have a number of them that we have kept in bed for from one and one-half to two years.

We occasionally see a rash as one of the evidences of reactivity; and in the camps, where men have been gathered together in large groups, it has been brought out again that following hemolytic streptococcus throat infections they are apt to have recurrences or initial attacks of rheumatic fever.

Medical Officers Needed for Federal Civilian War Service.

The critical shortage of physicians to engage in vital war work in the civilian branches of the Government continues. The great need for these men resulted in the announcing of a liberalized civil-service examination for Medical Officers in 1941. The Civil Service Commission has just revised and re-announced this examination.

The twenty optional branches under which doctors may apply range from General Practice to Aviation Medicine. Those appointed will perform professional duties as doctors of medicine in active practice in hospitals, in dispensaries, or in the field or in rural areas; or in bureaus of the Government such as the Veterans Administration, Civil Aeronautics Administration, Public Health Service, and Food and Drug Administration. Doctors will also be used in industrial establishments under dlirection of the War Department.

Applicants for all grades must have received the degree of M. D. from an accredited medical school. Applicants for the Senior Medical Officer grade ($5,228 a year) must have at least 5 years of appropriate medical experience; for the Medical Officer grade ($4,428 a year), 3 years of experience in addition to a required interneship; and for the Associate Medical Officer grade ($3,828) 1 year of interneship. The salaries quoted include overtime pay.

There are no written tests and no age limits. Persons now using their highest skills in war work should not apply for these positions. Appointments in Federal positions are made in accordance with War Manpower policies and employment stabilization plans. Before a definite offer of appointment is made, eligibles are cleared through the Procurement and Assignment Service for Physicians, Dentists, and Veterinarians, of the War Manpower Commission.

Persons rated eligible on the Medical Officer examination of 1941 need not file applications again unless they consider that they now possess qualifications for eligibility in a higher grade or different option.

Further information and application forms may be obtained at first- and second-class post offices, Civil Service Regional Offices, and the Commission in Washington, D. C.

THE INDUSTRIAL DEVELOPMENT OF VITAMINS OF THE B COMPLEX

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It has been said that the most significant problem in nutrition, from the point of view of national fitness, is in the chronic malnourishment observed among people in every walk of life; the malnourishment due to a lack of the proper kind and quality of foods which makes for hidden hunger, lessened vigor of mind and body, a low level of resistance to disease, and a shattered capacity for bearing the burdens of everyday life. This nutritional unfitness was observed in many of the young men rejected in the draft.

The data from careful dietary surveys show that there are large numbers of people in the United States who live on diets which do not contain enough vitamins, particularly those of the vitamin B complex. From the point of view of preventive medicine, the evidence is conclusive that there is a great opportunity to improve the health of the nation by increasing the vitamin B complex content of the diets of a considerable part of our population. This evidence has recently been confirmed in a Gallup poll conducted by the American Institute of Public Opinion. A record of the principal foods eaten by representative adults in all states was compared with the list of essential health foods widely recommended by the Bureau of Home Economics. Certain geographic sections were shown to have dietary habits in which there were pronounced deficiencies.

The several hundred delegates who attended the Washington Nutrition Conference in 1941 were aware of the necessity and opportunity to improve the nation's diet and were conscious of the losses in vitamins in the American diet due to wasteful practices in the consumption of milk; the lack of fruits and raw greens in the diet; the increased and excessive consumption of sugar; and the decortication of grains by modern milling methods which reduce the riboflavin content to 1/3, the niacin to 1/5 and the thiamine content to 1/7 of the original values. Consequently, these delegates approved recommendations relating to requirements to good nutrition submitted by the Food and Nutrition Board of the National Research Council. This "Washington Nutrition Yardstick", as it was aptly termed by the British nutrition expert, Sir John Orr, recommended as a daily allowance for a moderately active 150 pound man geared to 3000 calories per day, 5000 I.U. vitamin A, 75 mg. vitamin C, 1.8 mg. vitamin B_1, 2.7 mg. vitamin B_2, 18 mg. niacin, 0.8 gm. calcium, 12 milligram iron and 70 grams of protein.

The relative ease and low cost of production together with high content of energy-yielding nutrients, have elevated cereal grains, rice and corn to a high place in the diets of peoples whose civilizations are based on agriculture. Today, wheat alone provides more calories for the English speaking world than any other food. The essential vitamins and minerals originally present in cereal grains which are removed in milling and baking processes can be readily re-introduced. Thus, in consideration of the above views of deficiencies in vitamins and opportunities for improvement of the diet, the enrichment of flour and bread has now become a matter of government regulation. Today, according to the Food and Drug Administration standards, enriched flour, from January 1, 1942, "must contain in each pound not less than 1.66 milligrams of vitamin B_1 (thiamine), not less than 6 milligrams of nicotinic acid or nicotinic acid amide, and not less than 6 milligrams of iron". Again, according to Food Distribution Order No. 1 issued by Secretary of Agriculture Wickard, from January 18, 1943, all white bread must be enriched. Furthermore, a proposed order was issued by the Food and Drug Administration on June 4, 1943, which would amend the above requirements for enriched flour to read as follows, "contains in each pound not less than 2.0 milligrams and not more than 2.5 milligrams of thiamine, not less than 1.2 milligrams and not more than 1.5 milligrams of riboflavin, not less than 16.0 milligrams and not more than 20.0 milligrams of niacin or niacin amide, not less than 13.0 milligrams and not more than 16.5 milligrams of iron (Fe)."

Of the total annual consumption of more than 105,000,000 barrels of flour, it has been conservatively estimated that the United States requirement for enriched flour is at present in the neighborhood

of 40 per cent. The proposed standards for enrichment call for a minimum content of 2/5 g. of thiamine, 1/4 g. of riboflavin and 4 g. of niacin per 196 lb. barrel of flour and, consequently, for more than 16,000 kilos of vitamin B_1, 10,000 kilos of riboflavin and 160,000 kilos of nicotinic acid per annum. These quantities are still further extended by the necessity for the fulfillment of requirements by the war-stricken peoples of the Allied Nations. These demands for vitamins in the order of tons and hundreds of tons are so stupendous that a brief consideration of the methods of synthesis of the vitamins of the B complex and the various problems involved in their commercial development may be of more than passing interest.

The isolation, identification and synthetic reproduction of the chemical entities we know as vitamins are processes which follow a more-or-less routine procedure. But between the laboratory synthesis and production on a commercial scale there is a "great gulf fixed". The laboratory synthesis may have employed extreme conditions of temperature and pressure, and have been carried out in complicated apparatus with the aid of rare and expensive reagents and catalysts. The elaboration of the small scale batch process of the chemical research laboratory requires the services of a chemical engineering laboratory to introduce gradually the process into pilot plant operation. From temperature, pressure, corrosion and other observations and from experimental equipment studies made in such a laboratory, the chemical engineering designers are able to draw the blueprints for factory buildings and installations so that ultimately an economical large-scale continuous production of the vitamin becomes a commercial possibility.

The actual commercial development of the synthetic production of the vitamins of the B complex was initiated by an event only distantly related to this particular family of vitamins. By a chain of fortuitous events, it had become possible to synthesize the hitherto rare ascorbic acid from glucose by a simple set of chemical and biochemical reactions and, in 1934, to introduce synthetic vitamin C commercially. A gradual realization that increasing commercial demands for this material was capable of supply by a synthetic material made from glucose gradually brought into being a fresh concept as to the nature of the scarcely-known vitamins. It began to be apparent that, after all, the vitamins might turn out to be substances capable of economic synthetic commercial production—a probability that the previous history of the better-known but non-synthesized oil-soluble vitamins had done little to foster—a probability that has become an astonishing reality. The early commercial supplies of vitamin C were little more than a scientific novelty and were sold to the trade in ounces. Its use in the beverage and related food industries gradually increased so that today, under General Preference Order M-269, the sale of vitamin C in the U. S. A. is governed by priority ruling to control the estimated production of 6 million lbs., a figure that may reach 8 million in 1944, a decade after its introduction.

Following the successful introduction of vitamin C, Merck & Co., Inc., began their collaboration with Dr. R. R. Williams that was to lead to the now familiar but still brilliant synthesis of vitamin B_1. As a result of several years of intensive work, aided by the introduction of quinine salts for elution of the vitamin from fullers' earth used as an adsorbent, and by control of the progress of isolation by curative tests on polyneuritic rats, Williams and his co-workers were able to devise a method for securing consistent yields of the antineuritic vitamin hydrochloride of approximately 5 grams per ton of rice polishings. By processing tons of rice polishings in large scale commercial equipment, sufficient of the precious natural vitamin in the pure crystalline state was obtained to permit the continuation of the analytical studies that had already shown the ready cleavage of the vitamin into pyrimidine and thiazole portions, and to facilitate the investigation and ultimate successful synthesis of the pyrimidine moiety and of the vitamin itself. The culminating stage of final successful commercial synthesis was soon accomplished so that, today, the enormous demands for this pure crystalline product can be readily met and satisfied.

The vitamin theory of Funk had postulated the existence of various deficiency diseases, including rickets, scurvy, beriberi and pellagra. Previous to 1920, the antiberiberi vitamin factor had been related to the water-soluble B factor of McCollum and Davis and, consequently, designated as vitamin B. The work of Smith and Hendrick in 1926

showed the presence of both growth and antiberiberi factors in the so-called vitamin B extracts. Thus, when Goldberger further demonstrated that these extracts from liver, yeast and other food sources also contained an antipellagra factor, confusion originated and it was not until recently that the tangles of the so-called vitamin B complex have been straightened out. The confusion has been cleared up, due mainly to work on related fields on growth factors and to broader concepts as to the biological function of the vitamins. The many investigations of the growth-stimulating factors contained in sterile decoctions of yeast, termed "bios" by Wildiers in 1901, have led to the recognition of vitamin B_1, B_6, biotin, pantothenic acid and inositol as well-established members. Growth factors for other microorganisms include, in addition to these named, vitamin B_2, nicotinic acid, folic acid, p-aminobenzoic acid and choline—all of which occur in vitamin B extracts. It seems, therefore, probable that all these compounds, which are growth factors for microorganisms, may function as vitamins for animals and that they all play a vitally important part in life processes. Many of these compounds were previously well-known chemical entities. The use of their long-established names and the adoption of other names such as thiamine, to replace previous nomenclature with therapeutic indication, is rapidly rendering obsolete the terminology, vitamin B_1, B_2, B_6, etc.

Historically, the scientific study of riboflavin traced its course for many years independent of the concurrent vitamin investigations. The chemical nature of this water-soluble, yellow-green fluorescent pigment of whey attracted the attention of Blyth in 1879, and its more obvious properties were described by Bleyer and Kallman in 1925. In 1932, Warburg and Christian described a new oxidation enzyme whose prosthetic or chemically active grouping was a pigment component, which in irradiation in alkaline solution and consequent acidification, gave the yellow chloroform-soluble lumiflavin which was also readily obtained from the relatively heat-stable pigment of whey. Three different laboratories in 1933 reported on the relationship and probable identity of the water-soluble yellow-green fluorescent pigments—the lyochromes of milk, liver, egg-albumen, etc.—with the growth-producing vitamin B_2. For these pigments Kuhn and his co-workers suggested the group name, flavins. Further investigation showed the common occurrence in many natural source materials of an identical flavin with maximum vitamin potency—the riboflavin of the vitamin B complex.

The pioneering work of Kuhn on the structure of riboflavin showed its close relationship to lumiflavin and proved it to be a *d*-ribose derivative of isoalloxazine. Various laboratory syntheses were devised but only by immense labor and infinite pains and trouble has it been possible to fashion a suitable commercial synthesis capable of supplying today's enormous demands for this vitamin so essential for nutritional purposes.

Funk originally listed pellagra among the deficiency diseases, and, in the United States, as early as 1915, Goldberger and his collaborators suggested that the lack of certain dietary constituents might play an important role in the development of pellagra, but it was not until about 1926, when it was found that the thermostable portion of vitamin B had pellagra-preventive properties, that serious search for this factor began—an investigation hampered by failure to distinguish between human pellagra and apparently similar forms of dermatitis in rats and chicks. Gradually, it became realized that black tongue in dogs was analogous to human pellagra and investigation of this disease, which was alleviated by liver extracts, led to the demonstration, in 1937, that synthetic nicotinic acid would cure black tongue in dogs. The isolation of nicotinamide (previously obtained from horse blood by Warburg and Christian in 1935) from liver was achieved by distillation of concentrates in a molecular still, and the amide was shown to be the effective liver factor curative of black tongue. Almost immediately, nicotinic acid (niacin) was successfully applied in the treatment of pellagra in human beings who usually suffer from multiple vitamin deficiency but whose characteristic symptoms are certainly due to niacin deficiency.

The work of Győrgy (1934-36) showed that the rat pellagra or dermatitis, at one time confused with human pellagra, could be cured by a factor present in yeast to which he gave the name vitamin B_6—a factor subsequently shown to be identical with the "yeast-eluate factor" of Macrae and co-workers. The disease resembles a particular disease of infancy

termed "pink disease" or acrodynia which is characterized, in the rat, by severe dermatitis on the extremities; the paws, nose and ears. In 1938, the vitamin was isolated almost simultaneously by a number of investigators (Lepkovsky, György, Kuhn and Wendt, Keresztesy and Stevens, Ichiba and Michi). In the course of a year, the structure of the vitamin was elucidated, and the vitamin itself was synthesized by Harris and Folkers of the Merck Research Laboratory.

The pellagra-like dermatitis in chicks bred under conditions of controlled deficiency is due, not to nicotinic acid deficiency, but to the lack of another vitamin of the B group which in the past was called the "chick anti-dermatitis vitamin" or "filtrate factor". Concentrates of this elusive vitamin were obtained in the laboratories of Elvehjem in Wisconsin and of Lepkovsky and Jukes in California, and by 1939 Elvehjem and his co-workers were able to show that the factor was liable to hot acids in alkalies and contained in its molecule beta-alanine and a hydroxy acid which was capable of ready lactonization.

In 1933, R. J. Williams and his collaborators had discovered an acidic substance of widespread occurrence which stimulates the growth of yeast. During subsequent years, Williams was able to concentrate this yeast growth factor which he called pantothenic acid and to obtain as a final product a calcium salt which he estimated to have a purity of about 90 per cent. Williams and his co-workers showed that pantothenic acid consisted of beta-alanine in combination with a hydroxy acid and almost simultaneously the Wisconsin and California workers came to the conclusion that the chick anti-dermatitis factor and pantothenic acid were one and the same substance.

For some time before this, research work on the chick anti-dermatitis factor had been in progress in the Merck Research Laboratory, and in the spring of 1939, the collaboration of R. J. Williams was obtained and a mutual interchange of unpublished data took place. The microbiological assay method dependent on the stimulation of the growth of micro-organisms by pantothenic acid, developed by Williams and his co-workers, was invaluable in the investigations which led to the isolation of the lactone moiety of the vitamin molecule, the elucidation of its structure and finally to the synthesis of the calcium salt of the physiologically active acid.

The growth-factor biotin, which cures rats and humans of the skin disease known as egg-white injury and which had previously been identified as vitamin H and as co-enzyme R has now been synthesized. Its structural formula was recently announced by du Vigneaud and his co-workers at Cornell University Medical College. Known to have a cyclic urea linkage and a valeric acid side chain, further studies in collaboration with a group of workers from the Merck Laboratories, some of them thenic acid, confirmed by desulfurizing reductive determination studies of vitamins B_1, B_6 and pantothenic acid, confirmed by desulfurizing reductive cleavage that the fundamental ring structure was indeed a thiophene and that biotine is 2′-keto-3, 4-imidazolido-2-tetrahydrothiophene-valeric acid. Within a few months of this announcement of the structure, the Merck workers achieved the successful synthesis of this new member of the vitamin B complex.

In this brief account of the synthesis of the various members of the vitamin B complex, each stage in the progress of development from an obscure physiologically-active principle to the commercially available and well-established synthetic vitamin is illustrated. At one extreme has been pictured the large-scale synthesis of vitamin B_1, at the other has been noted folic acid, known only as an impure concentrate. Intermediate stages are represented by biotin, whose laboratory synthesis has just been accomplished, and by synthetic pyridoxine with its place in nutrition, as yet, undecided.

Other than the increased requisitions for vitamin A and vitamin D, the chief demands for vitamins in combating deficiency diseases are for thiamine, riboflavin, niacin and ascorbic acid. The vast requirements for these vitamins are being met, in part, by increased synthetic production whose economical progress is witnessed by the ever decreasing costs to the consumer.

The necessity and magnitude of the task of supplying synthetic vitamins is plainly apparent. The vitamin industry geared to this task owes its phenomenal growth to courageous planning and investment, to wise counsel and direction, to ingenious research and engineering and to the strenuous efforts of labor and management in close cooperation. These steadily expanding plants of the vitamin in-

dustry, with their large research divisions in up-to-date laboratories and their close cooperation with academic groups in related professions, bear witness to the intention of the American manufacturers of fine chemicals to play their part, in the present crisis and in the post-war world, in making available adequate supplies of the vitamins so essential to maintain the abundant health and well-being of the citizens of the United States and the myriads in the various countries of the United Nations.

Nurses Needed for the Armed Forces,

And, Doctor, you can help by encouraging private duty nurses to enroll for military service and by urging the layman to contribute toward winning the war by dismissing a private duty nurse as soon as the stage of convalescence has been reached.

Thirty-six thousand nurses are needed annually for war duty—30,000 for the Army and 6,000 for the Navy. The number required each month is 3,000 nurses, yet at no time this year has the quota been met.

Appointed by the Surgeon-General of the U. S. Army as the official nurse recruiting agency, the Red Cross is now asking the support of physicians in presenting the appeal to the members of the nursing profession whose presence in the amphitheatre of conflict is essential to the winning of the war. Enrollment is not obligatory. Nurses must be convinced of the need and encouraged to enter service. Doctors by giving their advice and counsel can help nurses to make their decisions.

The size of the Army in World War II is twice that of the last war, and there are six times as many military posts inside the United States and five times as many outside our territorial limits. Yet the increase of nurses is not nearly proportionate. In the last war 23,868 were serving; so far in this war approximately 30,000.

Tabulating the distribution of nurses in 30 representative states, it was found that nurses assigned to the armed forces came from the following groups: institutional, 68 per cent; private duty, 21 per cent; public health, 6 per cent; miscellaneous, 4 per cent; and industrial, 1 per cent.

Institutions have contributed most largely to the nursing personnel of the armed forces and it is now primarily the private duty class which must be released for military duty.

Nursing "as usual" cannot go on and civilian hospitals will be forced to operate under the strain of reduced staffs. Yet inventories reveal that there is a back-log of nurses who have yet to be called upon to fill in the gaps. In 1941 there were 13,753 inactive and available nurses; in 1943 the number has been increased to 23,009. In reverse ratio, the number of inactive nurses listed as not available has been reduced from 42,647 in 1941 to 29,124 in 1943.

Outside the patriotic motive, the inducements to enter the service are more attractive than ever before. Nurses go into the Army with the relative rank of second lieutenant and into the Navy with the rank of ensign. They receive a monthly base pay of $150 with "allowances" increasing the value to an estimated $216. Promotion to the higher ranks carries the same pay increases as in other branches of the services, and privileges and responsibilities are the same as for any military officer of comparable rank. Government insurance and retirement privileges are included.

Through nurse recruitment stations set up in every city of 25,000 population or more, the widespread facilities of the Red Cross have been used to carry the appeal to nurses and the public again and again. Now the Red Cross turns to the medical profession for its active cooperation in this all-important campaign.

We cannot be secure on the home front unless our troops have the best nursing care; we cannot be certain of victory unless the wounded have every chance to live.

ECTOPIC PREGNANCY: A REPORT OF 130 CASES

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Ectopic pregnancy is a fairly standardized subject. It is a familiar surgical emergency, whose successful handling is of constant interest, particularly to those of you who work, as I do, in a private hospital with a trained surgical staff. On this assumption, I present this report of 130 ectopic cases operated on at the Johnston-Willis Hospital.

Let us note at the outset that the large majority of the cases in this series were reported by our own staff physicians, who are all regular attendants at our weekly "Journal Club" meetings. These meetings have an average attendance of about 98 per cent. Everyone has the rotating privilege of participating in the agenda; so we know that all our members are continuously exposed to the teaching of good medicine—an opinion which I hope may be reflected from this report.

Ectopic pregnancy has long been recognized by our profession—for centuries, perhaps. However, the first authentic report of a case that I am able to find is that of John Bard of New York in 1859. Earlier dates could possibly be set—if one had an imaginative mind and much time for the investigation. Certainly, Lawson Tait was one of the first American surgeons to operate for this condition.

The incidence of ectopic pregnancy is difficult to set. Some estimate that at least 10,000 cases occur in the United States every year. This, with a mortality quoted at 4.46 per cent, is a serious indictment of present-day surgery. We must also remember that many more cases are doubtless overlooked —in the wholesale pelvic surgery now undertaken by all grades of surgeons, some of them without trained pathologists to check their material; also, the recorded statistics are from our best hospitals, not the work of those mediocre and inexperienced operators who are handling too much of today's emergency surgery. In Schuman's exhaustive study of all the admissions to Philadelphia hospitals, he concludes that the incidence of ectopic pregnancy is about one ectopic for every three hundred pregnancies admitted. This, of course, includes all the miscarriages and abortions that were recognized.

Surgical literature records about 95-98 per cent of ectopic pregnancies as tubal. The incidence of ovarian, interstitial and abdominal pregnancy is rare; and of such cases only one, a proven ovarian pregnancy, is recorded in our series. Tubal gestation may occur at any time during the child-bearing age. Schuman says that his average ectopic patient is between 24 and 33 years old. Schaffey gives 23 to 35 years as the usual age, which agrees with our own findings. White, parous women are predominant in the record; but it does occur in nulliparous patients just often enough to keep us aware of the possibility. Patients with previous tubal pregnancy are thought more likely to have a second occurrence. But only two known patients among our 130 cases had an additional extra-uterine pregnancy. Neither of these patients had children, so the other tube had not been disturbed at the first operation.

Many factors enter into the causes of ectopic pregnancy; it is not easy to determine the primary origin. Venereal infection is certainly the most popular etiology among students of the subject. Falk has stated that 95 per cent of his cases showed results of infection. This is certainly strong support of the infection theory. Falk substantiates his findings by the fact that Harlem has a high percentage of extra-uterine pregnancies, where the incidence of gonorrhea is also high, in comparison with Pennsylvania's Quaker settlements, where the young remain close to their mothers' apron-strings, and where both gonorrhea and extra-uterine pregnancies are rare. Litzenberg, on the other hand, writes that less than 10 per cent of his specimens showed positive pathology. How can cold figures be 85 per cent apart?

There are several recorded causes of ectopic pregnancy beside the infection above mentioned, which leads the list. Among them are: abnormalities in the tubes, inflammatory conditions, diverticula, decidual reaction in the tubular epithelium, obstruction in a tube caused by adhesions, tumors, and any abnormal interference with the passage of the ovum. Insufflation and use of uterine dilators are also reported causes of this condition. Ovarian cysts, pelvic inflammatory disease and threatened abortion should be eliminated by differential diagnosis. In

short, the patient's history, plus her laboratory findings will usually clarify our diagnosis.

The importance of making an accurate and prompt diagnosis of ectopic pregnancy is great, yet in no condition of the pelvis is an inaccurate diagnosis so often made. Litzenberg declares that "the most typical thing tbout an extra-uterine pregnancy is that it is a-typical"—a useful axiom to remember. Before rupture, the diagnosis is rarely made, the tube—so far—being as soft as an abdominal loop. When ruptured by the normal development of the abnormally placed ovum, we have—immediately—one of the most serious emergencies in the practice of surgery.

I recall that some years ago, when I had a service at a charity hospital, I operated on three extra-uterine pregnancies in one year that were referred to us by the same physician from an adjacent state. They were all sent in as "disease of the adnexa". Yet this is not a reflection on their physician; they were not severe cases, and in each case he was not called until the patient had already recovered from the significant first symptoms of pain and mild shock. I mention them to emphasize the possibility of failure to recognize this emergency, when the case is already an "old one", first seen in the treacherous interval between primary and secondary hemorrhage.

Sudden pain and shock, bleeding, with the history of a late or missed menstrual period, are the cardinal symptoms of extra-uterine pregnancy. Of these, the most common and dependable symptom in our series was pain, usually in the lower abdomen. In cases of profuse hemorrhage, where the diaphragm was irritated by blood, there was also pain in the shoulder from irritation of the phrenic nerve. Distention and tenderness were other frequent findings. If hemorrhage was significant, there would be a corresponding drop in hemoglobin and an increase in w.b.c. If we made a pelvic examination, some dark blood was usually found in the vagina, in contrast to red blood found there if the patient were aborting. The uterus was usually somewhat enlarged and presented a feeling of bogginess. Pressure against the cervix from any cause produced pain. A mass might be felt in the region of the tube; however, the size of the uterus on pelvic examination is not a dependable sign. Nor should one ever make a pelvic examination of a suspected ectopic patient, unless he is prepared to operate immediately. Pain, faintness, shock following lifting or coitus are significant and most important indications.

In our current series of 130 cases, the majority of them came from the city of Richmond and its vicinity. The most distant one traveled 250 miles. On arrival at the hospital, nearly all were operated on as soon as the diagnosis was made and blood obtained for transfusion. In the meantime we resorted to hypoclysis therapy. Here I would state that blood transfusion is the single factor which has added more than any other to the safety of operations for ectopic pregnancy. Blood is the life-saving measure in desperate cases, and should be given liberally. Transfusion, however, should be started at the *beginning of the operation*, not before, on account of its effect on the blood pressure, which, if raised, thereby would increase the hemorrhage.

One of our reported cases was given 2,000 cc. of blood, begun on the operating table, and 1,000 cc. in the next 24 hours. This patient's pressure was so low that the blood had to be forced into her vein. Of course, no record of her pressure could be made. Fortunately, the majority of ectopics entering our hospital are not in this serious condition. For such cases there may be little indication for transfusion unless there has been a distinct loss of blood. But for serious cases, we must be always on the alert and prepared to meet the grave emergency with this strong life-saving measure.

The operation for an ectopic pregnancy is safely performed in a short time by a competent surgeon. The decision for or against removal of the opposite tube depends on (1) the patient's desire for future pregnancy; (2) her number of children; (3) the patient's age and the condition of the remaining tube; (4) the patient's condition. If she has two or more children, we advice ligation or resection of the remaining tube. If she is approaching 40, and if there is any question of damage to the other tube, we remove or ligate it. But if the woman has no children and the remaining tube is apparently healthy, we do not disturb it. In this, as in certain other surgical series, we have followed no fixed rule, determining each case on its own merits, individually.

The appendix is not removed routinely in this operation. To some extent we remove blood-clots and free blood; but we make no attempt to get rid

of all present blood. And in no case is this blood used for transfusion.

An experienced anesthetist, who is a graduate in medicine, gives the general anesthesia which we use routinely in our cases of ectopic pregnancy. I mention anesthesia here, because of its importance in the case of the ill patient. Local and spinal anesthesia have no place in ectopic pregnancy.

It is interesting that in this entire series of 130 cases there was not a single serious complication. In the presence of free blood and clots, low resistance from loss of blood, and—certainly in some cases—infection in the tubes, we might have foreseen complications. But there were none. Such results point the question—whether time spent in the removal of clots and free blood, plus the necessary handling of the small intestine required in such enterprises, is of great value.

All of our ectopic cases have been white patients, representing the average woman between 23 and 35 years old in average circumstances in the city of Richmond and adjoining territory. The percentage of infection in the removed specimen was reported small by our pathologists; and we may note again that this report is from the laboratory of a private hospital, where one would expect a minimum amount of infection. Also in our series, the occurrence of a pregnancy in the tube was about equally divided between the right and left tubes.

The one fatal case in the series deserves a detailed report:

Mrs. C. entered the hospital in shock. She had been transported about 45 miles. Her family physician had given her supportive measures with little improvement. Her w.b.c. was 18,000; hemoglobin 55 per cent; polys. 88 per cent. She was given immediate hypoclysis support, and showed definite improvement after a few hours. Plans for the operation were under way when the resident reported the patient's condition as rapidly changing for the worse. We operated immediately. A very profuse hemorrhage was found and controlled; but blood was not available for a transfusion. The patient died twenty hours after operation.

The great lesson in this case is two-fold: first, when a patient's condition improves and becomes somewhat stabilized from the primary hemorrhage, the operation should *then* be carried out; second, the *secondary* hemorrhage is far more serious than the first one. I believe, however, that if blood had been available, this, our one fatal case, would have survived.

To summarize: In this series of 130 cases of ectopic pregnancies admitted to Johnston-Willis Hospital, we note the importance of early recognition of a serious surgical emergency; we urge the liberal use of blood transfusion in cases with severe hemorrhage, and close supervision of every patient during the post-operative period. These, I think, are the factors responsible for a mortality as low as eight-tenths of one per cent (.8%) for the above series.

Books for Russian War Relief Needed.

Russian War Relief, which is sending American medical textbooks to Russian schools training surgeons and doctors for the front lines, has issued a new appeal for contributions of medical literature.

The appeal was in response to requests from the Russian Society for Cultural Relations with Foreign Countries. Russian officials point out that many Soviet schools of medicine were evacuated thousands of miles to Central Asia and the Urals from Kharkov, Kiev and other occupied cities. In most cases libraries had to be left behind. The Kiev Medical Institute, cited as one example, was moved to Chelyabinsk in the Urals, 1300 miles away. The Kharkov Medical Institute, whose faculty and student body were evacuated as the Reichswehr battered at the city's gates, is now at Chkalov, on the Ural River.

Many of the books sent from America to these and other medical schools were contributed by doctors and medical associations from all parts of the United States. They range in subject from child development to neuroses in war.

Inquiries or gifts of medical books should be sent to Russian War Relief, Inc., 11 East 35 Street, New York, 16, N. Y. A complete list of the books needed in the Soviet Union will be sent upon request. Donors may attach to their contributed books notes which will be forwarded to Russian medical libraries receiving the books.

THE GENESIS OF A DISABLING HEART ATTACK WITH DISCUSSION OF SYMPTOMS*

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In reading this intentionally informal paper, I make no claim to originality; all I shall say of scientific importance may be found in the books. My one distinguishing claim is that of an intimate and very personal familiarity with the case history and of all the symptoms reported. I trust that in a measure, by personalizing it, I may make the case report sufficiently vivid to be worth your attention.

Whatever may be your opinion about the causes of heart diseases in general, the fact remains that we, as a class, are peculiarly prone to cardiac disease, for, if you will check the deaths from cardiovascular disease occurring among physicians in any copy of the *Journal of the A. M. A.* and compare them with deaths from all other causes, you may appreciate my reason for calling your attention to some phases of heart disease with an illustrative case. If I seem indelicately personal in reporting this case, I beg you to believe it is because of the desire that you may become acutely aware of what might happen to you and how you may avoid the consequences of inattention to the warning signals which the patient, whose case history I shall discuss, recognized, but for many years completely ignored.

In accepting our Chairman's invitation to discuss some subject connected with diseases of the heart, I decided to report the case history of a patient of whom I have had an intimate knowledge extending over a number of years. I shall do so particularly for the purpose of directing your attention to some of the symptoms that have keenly interested me and have likewise commanded your attention time and again in your own practice.

I shall not tax you with a detailed review of the pathology of heart diseases, for the emphasis of modern cardiology, as McLeod says in his superb physiology, is laid on the etiology of the disease and the functional capacity of the patient rather than on the description of the structural defects.

In our study of diseased organs, I sometimes wonder if we may not fail to keep in proper perspective the anatomy and physiology so perfectly designed and adjusted by the Creator to perform their function in the animal economy. If you have not reviewed these sections in your study of the heart in recent years, time permitting, I can commend to your attention no more profitable and intriguing reading than is to be found in the recent text-books covering these subjects.

Physiologists discuss the heart's action from two points of view: The physical and the physiological. McLeod, considering it from the physical viewpoint, speaks of it as the pump of circulation which raises the blood pressure within the cavities, equipped with valves to direct the blood always in one direction. He also explains the causes of secondary phenomena, such as the sounds accompanying the heart's action, and certain secondary changes in pressure produced in the other thoracic viscera by each heart beat. From the physiological viewpoint, he calls our attention to the conditions responsible for the constant rhythmic activity of the heart and its control by the nervous system.

The older members of the society will recall with interest that Dr. Paul Dudley White, as the guest of this society many years ago, conducted a seminar on the heart for a week or more and held us spellbound as he discussed the more recent knowledge of the anatomy and physiology of the heart, defined the function of the pacemaker, explained the arrhythmias, demonstrated the use of the polygraph and revealed the incredible wonders of the electrocardiograph.

These and other means of scientific approach to the study of the diseases of the heart have vastly increased our knowledge of the normal and diseased heart, but supplement rather than take the place of careful history taking and physical examinations of the patient.

Let us never forget that in heart disease the subjective symptoms nearly always precede signs that are later demonstrable to the examining physician. Your reader regards this statement as the very heart of this paper.

*Read before the Augusta County Medical Association, at Staunton, February 3, 1943. The paper was illustrated by lantern slides.

The case history I wish to call to your attention is that of a physician who in his 63rd year was compelled to retire because of a coronary thrombosis, the culmination of rheumatic and hypertensive heart disease.

The attack of coronary thrombosis and subsequent history was such as you are all familiar with in your own practice. My object in reporting it in detail is to call your attention particularly to its pathogenesis covering a period of many years, and especially to guard you younger men against the intemperate working habits of the patient, and his utter disregard of the warning symptoms which he himself recognized but kidded himself in thinking that it couldn't happen to him.

The laboratory findings are not available and are recalled too indistinctly to report, except the fact that at the several clinics he attended there was no history or laboratory evidence of syphilis.

The patient's family history is unimportant except for the fact that a brother died of coronary thrombosis at sixty-three. The history that is pertinent is as follows:

The patient had recurrent attacks of tonsillitis since his earliest recollection until his tonsillectomy some fifteen years ago. When about ten years of age he had a disabling attack of rheumatic fever. He has had attacks of arthritis of more or less severity at intervals ever since and is rarely ever entirely free of such symptoms. In his twenty-second year he had eight weeks of typhoid fever, at twenty-six broncho-pneumonia complicating influenza, and diphtheria at the age of twenty-eight.

Rarely a year passed without a severe attack of tonsillitis which was frequently exudative and usually accompanied or followed with pains of more or less severity in the larger joints until his tonsillectomy as above noted. He does not recall giving up his work on account of these attacks except on one or two occasions, even though he often had considerable elevation of temperature. In 1916 or 1917 he had an attack of arthritis involving first one and then the other ankle with the usual symptoms of inflammation which rendered walking difficult and embarrassing but he did not stop work on account of it.

In February, 1919, while on night duty in camp, the patient was exposed to a severe storm, contracted a "cold" and was hospitalized for influenza with a sinus complication. For the latter, he was sent to Walter Reed for treatment from March 9th to April 1st.

Returning to his army post, some weeks later, he was awakened during the night with agonizing retrosternal pain which he thought was due to imprudent eating at the recreational center at a late hour that night. This was the first attack of angina pectoris the date of which he can definitely fix, but the attacks have continued at more or less frequent intervals and with varying degrees of severity, although his state of health, generally speaking, was as usual until 1923. At this time, he noticed stunts like taking hospital stairs two steps at a time, as had been his usual habit, could no longer be done without developing shortness of breath. In the intervening years, the breathlessness became disturbing and he noted slight edema of the ankles.

In the influenza epidemic of January, 1929, during a period of unusual stress and strain, dyspnea became more and more pronounced on exertion and was accompanied with definite retrosternal pain and a slight nocturnal cough with expectoration of frothy mucus. He had no elevation of temperature. These symptoms were so embarrassing that intervals of rest were necessary on climbing stairs or taking a moderate grade. He developed frequent attacks of nocturnal pain and dypnoea of such severity that sleep was nearly impossible. The patient would awaken time and again finding himself in the sitting posture in a state of violent hypopnea. These attacks of pain, dypnea and orthopnea made sleep impossible and he was finally driven to remain in bed for several days with definite relief. Then daily for the next week or ten days, he would venture out to make a call only to be forced home because of the retrosternal oppression and pain excited by breathing the wintry air. Following a night with disturbing dypnea, orthopnea, retrosternal pain, cough and expectoration of bloody mucus, the patient consulted a physician at the University of Virginia Hospital who made a diagnosis of broncho-pneumonia and ordered him to bed for several weeks. Not satisfied with the diagnosis, in February, this self-prescribing doctor, and I say this to condemn the practice, although loath to believe he had angina, consulted a cardiologist at St. Luke's Hospital, in Richmond, Va., who told him he defi-

nitely had angina pectoris and advised him to go at once to Florida. This advice was promptly respected.

Within 36 hours after arriving in Miami, the patient developed the most severe and disabling attack of arthritis involving the right knee he had experienced since childhood, but the anginal attacks stopped promptly and did not develop again until after his return to work in April or May.

Being now in his sixth decade, and appreciating his physical handicaps, the patient gave up most obstetrical and night work.

The anginal attacks became more frequent and the dyspnea more disturbing during the year preceding the attack of thrombosis, but the symptoms of congestive heart failure were never again so marked as in 1929.

In October, 1933, the patient first consulted a distinguished cardiologist at the Massachusetts General Hospital who told him he was suffering from hypertensive heart disease, coronary disease, left bundle branch block and left ventricular and congestive heart failure.

He advised him to return home at once, give up his work and put his house in order.

In discussing the symptoms with the patient, the consultant stated that the attacks of orthopnea occurred as a result of Cheyne-Stokes breathing in which the periods of apnea were unusually prolonged, forcing the patient to sit upright for relief. The patient recalled that he usually awoke during the state of hypopnea but that on several occasions he would awake in the upright position during the prolonged period of apnea in a state of great distress and agitation. The doctor's explanation of the episode was as follows: In the recumbent position, the failing hypertensive or coronary heart resulted in an insufficiency of oxygen in the blood with overstimulation of the respiratory center, inducing a condition of hypopnea. This in turn produced a saturation of the blood with oxygen and washed out so much carbon dioxide, the stimulator of respiration, the center was depressed and apnea supervened. This period in the cycle may last for a full minute or more.

Heedless of his physician's advice, the patient returned to his work. Within a few weeks the symptoms became so intolerable he consulted a cardiologist at the University of Virginia who confirmed the diagnosis in detail and advised him to exercise the utmost care in driving home and to go at once to bed. Still heedless of advice, he answered a number of calls in the P. M., turned in at early bed time and within an hour or two had an attack of coronary thrombosis with the usual symptoms, including agonizing pain, rapid pulse, shock, marked nausea and vomiting and pronounced and persistent vertigo.

Following a period of hospitalization in Washington for around five months, and attended by distinguished Washington and Baltimore consultants, the patient was pronounced totally and permanently disabled for work and was returned home. In December, just thirteen months from the first attack of coronary thrombosis, he had a similar attack with a long period of invalidism. During the next four or five years there was a gradual but progressive return to a fair degree of activity. In September, 1939, the patient developed a moderately sore throat on Monday, but continued his usual activities. On Friday, exhausted and finding his temperature 104, he went to bed and called his physician. During the course of this attack he was awakened during the night with a severe pain in the region of the right scapula which was, I believe, thought to be a pulmonary infarction and confirmed some weeks later at Walter Reed Hospital. During the patient's confinement at the hospital, a thrombophlebitis of the right leg occurred, prolonging his stay for months. Since then, February, 1940, he has made more rapid and definite improvement than has taken place at any time since the two coronary accidents. He thinks he might yet confirm Levine's statement that one may possibly survive multiple attacks of coronary thrombosis.

In his chapter on hypertensive heart disesase, Levine writes that the exact role played by the elevation of blood pressure is by no means clear, for the same degree of hypertension that is well tolerated by one patient for years may result in early cardiac deficiency in another.

And the cause or causes are equally obscure, whether due to permanent structural changes within the body, especially the arterioles, or to an altered nervous or functional state may be difficult to determine.

Raising an interesting question in respect to the etiology of hypertension is that group of cases having hypertension and angina in which, following an attack of coronary thrombosis, the blood pressure falls and the anginal attacks are relieved more or less completely. In the case under consideration this was the fortunate experience of my patient who, after becoming ambulatory, has had no return of high blood pressure and his anginal attacks are rare indeed compared with the frequency of his former attacks.

Levine states that in such cases permanent reduction of blood pressure is obviously due to an injury of the heart and cannot be explained on the basis of structural changes in the peripheral vascular tree, and that it is reasonable to suppose the previous hypertension was caused reflexly from an irritable focus in the heart, and, after the coronary thrombosis occurred, the local cause was removed.

Let us consider some of the more important symptoms in the case.

The first subjective symptoms were those of breathlessness on exertion and substernal pain, and subjective symptoms, let me insist, are the earliest evidences of heart disease. Regardless of our own skill and cleverness in making physical examinations, let us bear in mind Levine's statement that subjective complaints generally precede physical signs as evidence of heart failure; that the earliest evidence is shortness of breath on effort which formerly produced no distress. This, he says, is due to failure of the left ventricle and may be accompanied with slight cough, Cheyne-Stokes breathing and orthopnea, such as the case presented when he called on Dr. White. White found left ventricular failure, which is less common than failure of both ventricles but right v. failure shortly developed and was recognized by White on the occasion of a later consultation.

In writing of dypnea as an important cause of insomnia in coronary disease, White stresses position as an important factor, giving four reasons therefor:

First: The blood flow in recumbency is greater than in the upright position, in which gravity relieves the heart of an amount estimated at from one-third to one-half as much as passes through it in recumbency.

Second: In the upright position gravity drains off the engorged lungs.

Third: In the upright position with diaphragm and enlarged liver depressed, and ascitic fluid, if any, dependent, there is more room in the thorax for free heart and lung action.

Fourth: And importantly, in the recumbent position the respiratory center itself is directly acted upon by the high venous pressure, whereas gravity in the upright position at once helps to correct so far as the respiratory center is concerned. All of us are familiar with the appearance of the elderly patient with congestive heart failure sitting day and night in an arm-chair because of a decubitus dyspnea. White offers much the same explanation for nocturnal apnea the prognosis of which he says is especially grave—a fact of no especial comfort to the patient whose case is under consideration, as most of his severe attacks awaken him from sleep.

Levine says that bundle branch block occurs most frequently in hypertensive heart disease, in coronary disease, and in aortic and mitral stenosis, and always denotes disease of the myocardium, and that the average duration of life in cases of left B. B. B. is not more than a year or two, although exceptional cases may carry on for years. Your attention is directed to the fact that it has been nine years since White first recognized left B. B. B. in the case we have been reporting, and that it has been observed in all subsequent cardiograms.

As you well know, bundle branch block is due to blocking of impulses which originate in the sino-auricular node as they traverse the bundle of His and may involve either the right or left branch before they break up into the fibers of Perkinze. White tells us that it causes no symptoms, and the diagnosis of blocking is made only with the aid of cardiograph. Levine says B. B. B. may be suspected under certain conditions with gallop rhythm.

In speaking of the etiology of coronary thrombosis, Levine says that all the influences that are conducive to or are associated with arterial disease form the background upon which coronary thrombosis develops. The great majority of such patients have had a previous history of angina pectoris. The exact etiology is still a moot question not profitable of discussion here. The attacks, as in the case referred to, most often occur at rest in bed and are accompanied with degrees of pain of scarcely notice-

able character to the most agonizing suffering a mortal can endure. You are familiar with the symptoms and diagnosis. While the electrocardiograph is invaluable in making a study of these cases, White states that cases of complete occlusion of one main artery may occur without showing any evidence whatever of its existence in the cardiogram.

In calling your attention to the symptom complex known as congestive heart failure as a part of the picture of the case under consideration, I shall follow Levine rather closely as he has written the most illuminating chapter on the subject with which I am familiar. The onset of congestive heart failure cannot be predicated on the basis of the level or duration of the blood pressure with which it is commonly associated, for in many instances the determining factor is the integrity of the coronary arteries. There are yet other instances in which these vessels are apparently normal in which cardiac insufficiency develops. Levine calls this unknown etiological factor "X" and thinks it accounts for much that determines the whole question of congestive heart failure. The heart, he suggests, like skeletal muscles and other organs, contains many times more capillaries than are in use under ordinary circumstances. They are always subject to call and constitute the cardiac reserve. Levine ingeniously asks if when the heart failure develops and yet shows no obstruction in the main coronaries, may not the cause lie in some structural or functional defect, this unknown factor "X" that prevents the opening of these reserve channels?

Failure of one or both ventricles may occur with their distinguishing symptoms. Again, let me urge you to listen attentively to your patients' complaints, for they nearly always precede physical signs as evidence of heart failure. There are few if any signs that would suggest congestive failure in the absence of symptoms. Levine suggests Cheyne-Stokes breathing, diastolic gallop rhythm and possibly pulsus alternans which might possibly be detected and suggest impending subjective symptoms.

"The earliest evidence of heart failure," asserts Levine with conviction, "is abnormal breathlessness. The patient notices shortness of breath on efforts that formerly produced no distress. This is due to failure of the left ventricle." The dyspnea may come suddenly while at rest and may become more distressing until orthopnea develops. Cheyne-Stokes is common, rales are heard in the bases of the lungs, and a slight unproductive cough develops, usually nocturnal, or it may be on effort as a result of pulmonary congestion.

The first evidence of right ventricular failure is dependent edema, seen in swelling of the ankles at bed time which in the early stages disappears after the night's rest. As the case progresses, the edema extends upward and may become generalized. As a part of the venous congestion due to the failing right ventricle venous pressure increases, the jugulars are distended and the liver enlarges with the development of epigastric distress. In the case presented, the pain has always been worse at the lower angle of the right scapula, nearly always follows overexertion, and is of a dull aching character. It has been thought to be due to hepatic and pulmonary congestion. Levine says that ascites may be present as part of the picture, or as a result of portal obstruction. He further states that the combination of right and left ventricular failure is seen oftener than either one in the pure form, a statement that may be open to question.

The mechanism of congestive heart failure is not clear. One school of thought believes it is due to insufficient output of the heart to the tissues (forward failure), and the other that it is due to congestion of parts of the body, or back pressure (backward failure). Of one thing, says Levine, we are certain—while the heart may adjust itself to a slight imbalance in output from the two sides for short periods of time, the two ventricles must expel equal amounts of blood, else disaster will occur and you will see the complex of symptoms which we call congestive heart failure.

THE WOLFF-PARKINSON-WHITE SYNDROME

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and
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The unusual or rare finding in medicine is one incentive which keeps clinicians constantly on the alert, not only because of the advance in medicine that can be made by reporting a rare observation, but from the genuine pleasure the clinician himself derives in the recognition or discovering of something new and rare. When the observation has a practical clinical and human value it becomes worth reporting. Such is the recognition and subsequent clinical evaluation of the so-called syndrome of functional bundle branch block with short PR interval.

Mr. R. S., a 32-year-old photographic finisher, was first seen September 19, 1942, because of a complaint of palpitation of the heart. About an hour previously he had had what he termed a heart attack characterized by rapid beating and a fluttering sensation of the chest. These disagreeable sensations lasted only about 15 minutes. For the past 2 or three years he reported similar episodes at 2 or 3 months' intervals. The actual time of the rapid heart action was 10 to 15 seconds, but this was followed by a sinking feeling, slight dyspnea, and weakness, but attended by no pain. The attacks were apt to occur when he was overtired or nervous. There is no history of rheumatic fever. He had mild scarlet fever at the age of ten and there were no complications. He admits no necessity for restricting his physical activity.

His past history reveals measles, mumps, varicella and pertussis in childhood, recurrent bronchitis, and severe fungus dermatitis in 1933. His family history is non-contributory. He smokes slightly more than a pack of cigarettes daily and takes an occasional alcoholic drink. He works eight to ten hours daily in an ill ventilated, photographic, dark room, and his hands stay in a chronic state of inflammation due to a sensitivity to developing fluids.

The physical examination revealed a small, well developed male. The temperature was 98.6, and pulse 80. The heart was normal in size. There were no abnormal pulsations, murmurs or arrhythmias. The blood pressure was 110/80. The remainder of the physical examination, except for a scaling roughness of the hands, was essentially negative. The laboratory examination revealed hemoglobin 98 per cent, white blood count 7,350, with 67 per cent polynuclear neutrophiles, 32 per cent lymphocytes, and 1 per cent mononuclears. Urine was clear, acid, specific gravity 1,012, and sugar, acetone and albumin negative. The blood Wassermann was negative.

The electrocardiogram (Fig. 2) is of particular interest. The auricular and ventricular rates are 75. The PR interval is only .08 second, which is but half the normal. The QRS complex is .12 second. The rhythm is regular. Lead I shows wide, slurred R wave; Lead II, a wide, high R wave and an inverted or diphasic T; Lead III, an inverted T; and Lead IVF, a small R and a high peaked T.

The distinguishing characteristic of this tracing is the short PR interval with the wide slurred QRS complexes. This finding, while interesting cardiographically, does not indicate myocardial degeneration. A hypodermic injection of 1/75 grain of atropine had no effect on the pattern at 15, 30 and 60 minutes after.

We have shown this tracing with a true bundle branch block (Fig. 1) to illustrate the similarities and differences.

The true bundle branch block from another patient (Fig. 1) shows the auricular and ventricular rate of 65, the PR interval .16 seconds, the QRS .16 seconds, and the rhythm regular. Lead I shows wide, slurred QRS, and diphasic T; Lead II, wide, slurred QRS; Lead III, wide slurred, deep S; and Lead IVF, small R, and wide, slurred QRS. This is the picture of left bundle branch block, discordant type, which means myocardial degeneration, particularly of the ventricular conducting mechanism.

The syndrome of bundle branch block with a short PR interval was first reported by Wilson in 1915. Two other cases were reported in 1921 and 1929 respectively, but not until 1930 was there any

large group reported when Wolff, Parkinson and White collected and reported eleven cases, thus establishing the syndrome as a clinical entity. In 1936 Argentine workers reviewed twenty-seven from the literature and added seven of their own. In 1937 Bishop collected forty-four cases from the literature and added one of his own. Although the pattern is still rather rare, more and more are being recognized.

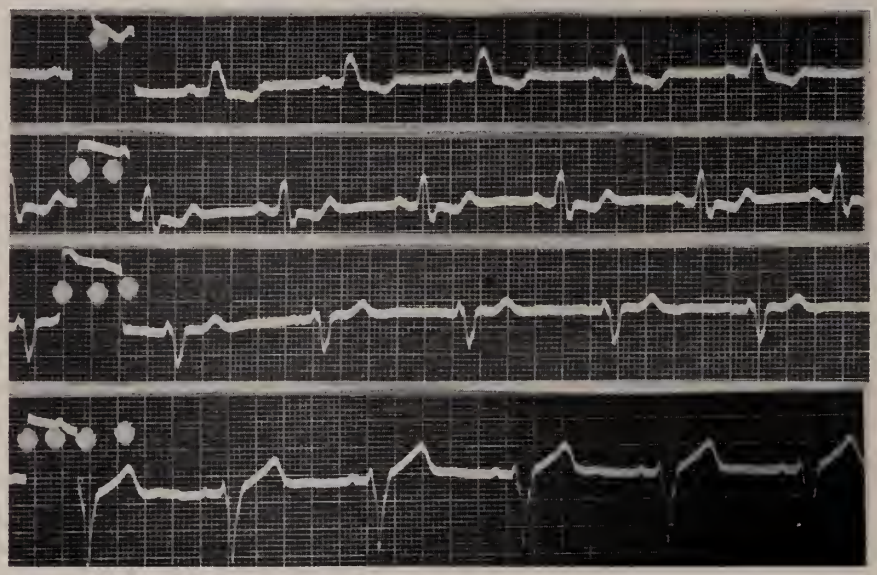

Fig. 1.—True bundle branch block (left).

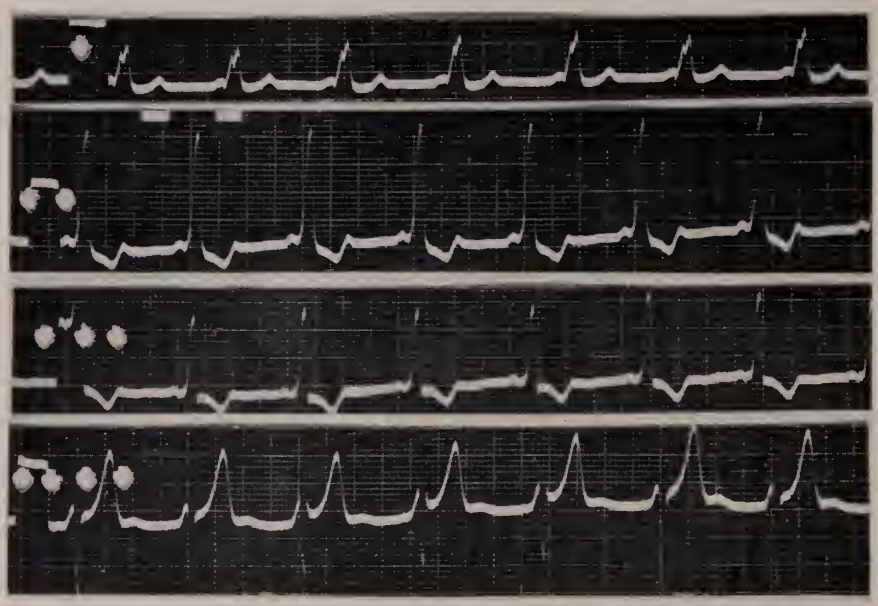

Fig. 2.—Wolff-Parkinson-White syndrome.

The syndrome usually occurs in healthy, young individuals, in men more often than in women, and most frequently in the second, third and fourth decades. The history of frequent attacks of palpitation after exercise or at rest is characteristic but

not inevitable. When organic heart disease is discovered in those having this condition, it is regarded as purely coincidental. Remission of the electrocardiogram to normal may be induced experimentally or may occur spontaneously. Atropine, quinidine or digitalis, respectively, have been used with varying degrees of success in accomplishing this.

The etiology is still uncertain. Two schools of thought seem to prevail in the literature. One postulates an accessory conducting bundle between the auricle and the ventricle (bundle of Kent), which is thought to shunt the impulse, thus creating a shorter PR interval, and at the same time, because of its aberrant course and entrance into the ventricle, to produce an abnormal QRS complex. The other theory holds that abnormal vagal tone slows the conduction through one of the conducting bundles, thus causing the impulse of the affected side to proceed around through muscle mass. However, since no one has demonstrated anatomically a bundle of Kent and since neutralization of the vagal effect by atropine does not always result in the abolishing of the bizarre electrocardiographic pattern, we must await further evidence before adopting either theory.

It is unanimously agreed among competent writers of wide cardiac experience that the disorder is purely functional. As Bishop has so succinctly stated, the patients are suffering from an electrocardiogram and not a disease. The tachycardia which is frequently associated with the syndrome, if troublesome, may be controlled by quinidine.

Therefore, the treatment is one of reassurance to the patient by encouraging him to live a normal life in spite of an occasional attack of tachycardia.

CONCLUSIONS

1. A case of bundle branch block with a short PR interval is reported.
2. A brief review of the theories of its causation is given.
3. The management of the patient is indicated.

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Report Effective Use of New Solution for Epidemic Eye Disease.

Effective use of a solution of sodium sulfathiazole containing desoxyephedrine in the treatment of epidemic keratoconjunctivitis, the new eye disease, is reported in *The Journal of the American Medical Association* for July 10 by H. S. Gradle, M.D., Chicago, and G. H. Harrison, M.D., Waukegan, Ill.

"Epidemic keratoconjunctivitis," the two men say, "has taken an enormous toll of man-hours during the past year, for the average loss of working time incurred in each case is from fourteen to eighteen days. Consequently any measure that can reduce such wastage is worth trying, even though it may not be uniformly successful. On that basis we are reporting the use of a new therapeutic measure that in our hands has proved worth while. It is realized that the number of cases is small, that the results are only those of clinical observation and that the accurate serolgic proof is missing."

The authors say that the new medication is harmless to the tissues of the eye, and reduces the time of the acute aspect of the disease to three to seven days. The solution is used as eye drops. In the 50 cases reported by them treatment was continued for several weeks after the acute phase had subsided.

SOME MENSTRUAL DISTURBANCES*

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Among the most frequent complaints we find in women are those concerned with menstrual disorders. We are all familiar with the more common disorders of amenorrhea, menorrhagia, metrorrhagia, etc. It is not my purpose to discuss these conditions, but rather to present several clinical pictures which seem to me to be related to a glandular disturbance, and which, to a greater or less extent, have responded to glandular therapy.

Case 1.—This was a white female, married, aged 28, who was first seen in January, 1939, complaining of nervousness and "peculiar" sensations over her entire body, beginning a few days before her menses and lasting throughout her periods. In the past, she had had acute rheumatic fever and an appendectomy. She began to menstruate at the age of 14; periods were regular every 28 days, lasting 3 days and accompanied by severe dysmenorrhea for one day. Her present complaint, as stated above, began about one year before I saw her. At that time, she also noticed a lessening in the amount of her menstrual flow.

Physical examination was negative except for a B.P. of 108/66, and the ordinary blood and urine tests were within normal limits. B.M.R. was minus 17. A vaginal smear showed many leucocytes with very few epithelial cells with large, dark, oval nuclei, suggestive of deficient estrogenic hormone—(eosin-hematoxylin stain). On the basis of her history, it was felt that this was a case of premenstrual tension, and, accordingly, she was given proluton to increase luteinization. However, this seemed to aggravate her symptoms. As a result, a shift was made to estrogenic substance and this was given once a week between periods for 4 months with complete relief of her complaints. However, since that time, she has returned at varying intervals of 2-6 months time because of a flare-up of her original complaints. On each occasion, one injection of 5,000 units of estrogenic substance seems to control her symptoms.

Case 2.—A white female, married, aged 31, complained of nausea and vomiting on the second day of her menstrual period. This had been going on for several years but in the past few months had become much worse. Her menses began at the age of 13, in a 28 day cycle, lasting 5-6 days until six months before her first visit on February 4, 1942. Since then the periods had lessened in amount and in duration to about three days. Thirteen years before she had had a spontaneous abortion at about the third month of pregnancy. Physical examination and laboratory work were essentially negative except for B.M.R. minus 14; B. P. 116/72. Vaginal smear findings were similar to Case 1. Glandular therapy was begun with 2,000 units of estrogenic substance being given every four days for one month. She felt some better and the dose was increased for another two months. At that time she felt fine and instituted in the form of 2,000 units of estrogenic therapy. She is now in the fourth month of her second pregnancy and is doing well.

Case 3.—A white female, aged 16, single, first seen in January, 1941, complained of severe nausea and vomiting for the first 24 hours of each menstrual period. Her periods had begun one year previously, lasted 5-6 days, and ran a 21 day cycle. She had no pain or discomfort at the time other than the vomiting. Physical examination, blood and urine were normal. Sedatives and antispasmodics were tried for several months with no lessening in the complaints. Glandular therapy was instituted in the form of 2,000 units of estrogenic substance weekly between periods. This treatment was carried out for three months and since then there has been no return of the above complaints.

Case 4.—A white female, single, aged 19, first seen in June, 1940, complained of having convulsions at her menses for one year. These convulsions occurred during her sleep and she did not know how severe they were, although on several occasions, the convulsions were so severe as to cause a dislocation of the shoulder. The past history was negative. She began to menstruate at the age of 12, in a 28 day cycle, with the periods lasting 3-5 days, and pain being present the first day.

Physical examination revealed a small uterus but no other pathology was found.

*Read at the meeting of the Roanoke Academy of Medicine on February 1, 1943.

Estrogenic substance was begun one week after her period ended and was continued every fifth day until the next period. This procedure was followed for three months without any recurrence of convulsions. For about one year she remained symptom-free at which time she left town and shortly thereafter had another convulsion with her menstrual period. A similar course of treatment was given again and since then (almost two years) there has been no return of the convulsions.

In presenting these four cases, I do so with the full realization that I cannot adequately explain the apparent success of treatment except that the complaints apparently were due to a lack of estrogenic substance. In connection with this, I would like to make a few remarks which might have some bearing on the matter.

In speaking of estrogenic substance I refer to the three main variants of the female estrogenic hormone which are now recognized:—

(1) Estradiol, which is probably the hormone actually produced by the graafian follicle. Has been isolated from follicular fluid.
(2) Estrone (estrin, theelin, folliculin, progynon, etc.), which is probably a derivative of and formed from estradiol in the body. Has been isolated from the urine, particularly that of pregnancy.
(3) Estriol (theelol) has also been found in the urine and probably represents another excretrion product of estradiol.

Owing to the difficulty in differentiating these substances, we shall consider them as "estrogenic hormone".

We do know that estrin, in the female, is the hormone which governs the growth and development of the genital tract, the secondary sex characteristics and the mental and physical traits characteristic of her sex. Furthermore, we know that estrin circulates in the blood stream after its release from the graafian follicle, and is thus carried to the various parts of the body. It reaches its maximum concentration in the blood stream during the few days immediately preceding menstruation when progesterone is dominant.

What the effect of this substance is on the other structures of the body, we cannot say, but apparently there is a very close tie-up between the glandular system and all the other structures and organs of the body. When one gland functions abnormally it can well upset the entire physical and mental status of the individual. If this be true, then a deficiency in estrin could well account for the bizarre side-effects of menstruation here presented. Apparently that was the condition in these cases; and by supplying substitution or stimulating doses of estrogenic substance we aided the glands to return to a normally functioning state and thus eliminated the complaints of the patients.

906 Medical Arts Building.

Sulfathiazole Used for Pyuria.

Good results from the use of sulfathiazole in the treatment of pyuria (pus in the urine) in 3 newborn boys are reported by Alfred Florman, M.D., and Murray H. Bass, M.D., New York, in *The Journal of the American Medical Association* for July 3.

In all cases bacteria were present in the urine. In 2 of the 3 jaundice was present and in 1 infant there was infection of the blood stream. These patients were treated with sulfathiazole and recovered in about two weeks in place of the five or six weeks needed for recovery before the use of sulfathiazole. The authors also stress that the physiologic changes taking place in the early infancy period are likely to lead to urinary infections at this early age.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a thirty-five year old colored primapara who had had no prenatal care. Profuse vaginal bleeding associated with abdominal pain began on September 2, at 3:00 A. M. A midwife saw the patient and immediately called a physician, who referred the patient to a hospital, where she was admitted at 9:30 A. M. At the time of admission the temperature was 99, pulse 80, and respiration 20, R.B.C. 3,020,000, Hb. 56 per cent, W.B.C. 11,700. There was no record of the blood pressure. Bleeding continued throughout the day. At 6:00 P. M. the pulse was 160 and the patient was taken to the operating room and a vaginal pack inserted. At 10:00 P. M. a blood transfusion was given. Several doses of morphine were given throughout the night, and there was moderate bleeding through the vaginal packing. At 12:00 M. on September 3 the vaginal pack was expelled and the patient seemed weaker. At 3:00 P. M. a Cesarean section was performed, thirty hours after admission to the hospital. The child was stillborn. A transfusion of 500 cc. of blood was given following the section. She was given venoclysis and various stimulants, but her course was rapidly down hill and she died twenty-two hours after the operation.

COMMENT

This case is considered as a preventable obstetrical death. There was no prenatal care. The treatment employed after admission to the hospital does not conform with either of the generally approved methods of treatment for premature separation of the normally implanted placenta. There was a delay of thirty hours after admission before the patient was delivered by Cesarean section. In the meantime the pulse had risen from 80 on admission to 160 at the time of the vaginal packing, eight hours after admission. If this were a recent death one might be inclined to suspect that the present shortage of physicians and hospital personnel, may have been a factor in the delay, but as a matter of fact, this patient died three months before Pearl Harbor.

The choice of the method of treatment for premature separation of the placenta presents a serious dilemma for the physician. One thing is certain however, that whatever method is selected, it should be carried out at the earliest possible moment, while the patient is in good condition. In either method, blood loss and shock should be combated with whole blood transfusions, before, during, and after delivery. If vaginal delivery is selected the membranes should be ruptured and a tight abdominal binder applied. If delivery by section is selected the same preparations for transfusions before, during, and after the operation should be carried out.

In the present case, a thirty-five year old primapara, with a pulse of 80 at the time of admission, it is quite possible that a Cesarean section then may have saved the patient. In any event some definitive type of treatment should have been instituted shortly after admission, and not thirty hours later, at which time the opportunity for a good result had passed no matter what type of treatment was employed.

In view of the absence of prenatal care and the delay in instituting treatment it is felt that this should be considered as a preventable death.

MENTAL HYGIENE NOTES

Morals are not rules which have been selected in a haphazard fashion by unfeeling adults to regulate the lives of happier individuals whose happiness these sterile elders envy. Rather they are the results of generations of seeking by mankind for the most successful methods by which people can live together in groups. The moral way is the happiest way in the long run, and has been proved by ages of trial and error. The happiest and the most successful are synonymous terms when so used, because it is the long time happiness that is concerned and success of group living or civilization that is meant.

Morals may become outmoded so need change, but this change cannot be sudden, cataclysmic in response to a new situation, as right changes are only brought through years of trial. Therefore, any abrupt rupture of moral law by large groups in a community cannot escape being wrong, nor can there be any doubt that it, this rupture, is dangerous to right living, so menaces the civilization of the whole. Neither can there be any doubt that all intelligent people are duty bound to counter-attack such an onslaught with all their might.

Now and for the next few years our civilization is threatened by the increase of delinquency among early adolescents. Especially is this true for sexual delinquency. There can be no doubt that there is a change in the accustomed types of behavior of large masses of this age group. Therefore, it is necessary to meet this new evil by an intelligent counter-attack.

Already this is being done in the home to a slight extent, but in the main in the school. Here sex is consciously taught by skilled workers from the primary grade through the High School. This is a positive approach which conquers the unmoral attitudes by showing the joy, the beauty and truth which make the moral code live. A program of sex education is set up with planned foresight to guide the child from the more or less sexless childhood through the transitional period of beginning sexual awareness to late adolescence, when the maturing child must be ready for sexual life.

This program should be a community program understood by parents as well as teachers, since all must lend a guiding hand, but directed in detail by skilled teachers who understand the sexual development of the child. The program must adapt itself skillfully to the growth of the "love impulse". It must adopt a proper terminology which removes the mysticism, as well as the condemnation, which makes illegitimate sex acts so attractive. Sex knowledge must be correlated with everyday experiences until acceptable modes of sex expression are submitted for the unacceptable. Through knowledge obtained by frank discussion the causative factors of sex delinquency must be removed.

Public schools of the country have tried such a program with success. It will work if carefully fostered and carried out with courage. There is a large bibliography on the subject which could be reviewed by any community that is interested. The approach is new, but the idea is old. It is a positive response to a menace. It offers practically the only solution. It is a step forward that may in the future turn this threat to a greater good.

DAVID C. WILSON.

To Be Wise—Loaf.

In his book, "The Importance of Living," Lin Yutang, the Chinese Philosopher, points out that those who are too busy can't be wise and that the wisest man is he who loafs most gracefully.

Christopher Morley, the famous writer, once said that he lies on the davenport reading detective stories when some of his best ideas flow into his mind.

Elbert Hubbard declared that he got some of his best thoughts while riding horseback or digging in the garden.

There's too much piffle about pep. Americans think they are cheating if they are not rushing. We would solve more of our problems, develop better ideas, if we would do more loafing. Let's loaf more and be wiser! (*Selected.*)

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The tabular report of the Bureau of Communicable Diseases of the State Board of Health for June, 1943, compared with the same month of 1942, and for the first six months of 1943, compared with the same period of 1942, follows:

	June 1943	June 1942	Jan.-June 1943	Jan.-June 1942
Typhoid and Paratyphoid	19	14	70	75
Diarrhea and Dysentery	326	409	928	913
Measles	1,021	340	8,873	4,624
Scarlet Fever	64	50	1,033	709
Diphtheria	11	14	163	214
Poliomyelitis	3	2	15	7
Meningitis	50	13	640	103
Undulant Fever	4	4	14	14
Rocky Mountain Spotted Fever	10	11	10	14
Tularemia	2	1	25	22

The month of June terminates the period of twelve months in which occurs the annual cycle of certain communicable diseases which are regularly most prevalent in the winter season. The following table summarizes the occurrence of cases of several such diseases in the year July 1, 1942 to June 30, 1943, in comparison with the corresponding period ending June 30, 1942.

	July-June 1942-1943	July-June 1941-1942
Diphtheria	648	755
Meningococcic Meningitis	722	138
Scarlet Fever	1,961	1,542
Measles	9,179	7,670
Tularemia	44	44

The most noteworthy item in the second table is the great increase of meningococcic meningitis which reflects a nation wide epidemic. While no great section of the United States has been without meningitis during this period, Virginia is one of the Atlantic seaboard States in which it has been especially prevalent. In most of the counties of the State only a case or two has occurred, and the disease has been most prevalent in a few highly congested areas. Complete data on mortality and the results of particular therapeutic measures are still unavailable, but incomplete data indicates that mortality has been at a relatively low rate chiefly because of the effectiveness of sulfonamide therapy.

The increase of scarlet fever and measles was due to minor local epidemics. The decline in diphtheria is a continuation of the downward trend of recent years. General prophylactic use of diphtheria toxin is probably responsible for the practical disappearance of diphtheria from numerous localities. This disease is now very unevenly distributed in Virginia with greatest prevalence in the far Southwestern section and in certain of the Southern Piedmont counties.

No change occurred in the number of reported cases of tularemia. Though only forty-four cases were reported, this disease is of great medical, epidemiologic and economic interest. As a relatively new clinical entity, tularemia presents a diagnostic challenge which should be kept in mind.

During the last twelve months there has been a comparatively low statewide incidence of the major communicable diseases with the exception of meningitis. At present there is no undue prevalence of typhoid fever or other major diseases of the summer season. We are already well into the period in which poliomyelitis is to be expected, without an undue number of cases. Though there has been a seasonal decline in meningococcus meningitis, it is still far above normal and this condition should be expected to continue in the immediate future. The beginning of a new annual cycle of diphtheria will be due in the late summer and early autumn, and this is the most appropriate time to administer antidiphtheritic immunizations for protection against it. It is needed not only for unimmunized infants and children, but also for older children whose immunity may have decreased since their toxoid treatment several years ago.

Miscellaneous

Recent Amendments to Food Rationing Meet New Needs.

Recent amendments to food rationing orders, involving osteopaths, condensed milk, fats, oils and hospitals, are summarized in *The Journal of the American Medical Association* for July 17 as follows:

The Office of Price Administration announced on July 2 that any medical practitioner authorized by the state in which he practices to prescribe all internal drugs is also authorized to certify that a person requires supplementary food rations for health reasons. Authority to make such certification was previously confined to doctors of medicine. OPA has now broadened the authority so that osteopaths in states which license osteopaths to prescribe all internal drugs may also prescribe supplementary food rations. Food rationing regulations provide that a person whose health requires more rationed food than his ration points permit him to buy may apply to his local board for necessary additional points. In some illnesses foods are prescribed in addition to drugs or medicines, or as a substitute for them. In some counties the work of ration boards in processing such applications has been much simplified through the voluntary help of the doctors themselves. By establishing panels to review all medical certifications and to advise the boards, responsibility for issuing extra rations for health reasons has been kept on a professional level.

The Office of Price Administration under the date of June 1 placed evaporated and condensed milk on the list of rationed products. These types of milk are added to the group of rationed foods containing meats and fats, for which red ration stamps are needed, without any increase in the total number of points allowed for this group. One point is required for one 14½ ounce can or for two 6 ounce cans or for two 8 ounce cans. This means that the child may use 7 of his 16 points per week for his milk requirements in terms of evaporated milk, which allows slightly less than the equivalent of a quart of whole milk per day, and have 9 points remaining for his meat and fat requirements. An invalid or any other person whose health requires that he have more canned milk than he can obtain with the stamps in his War Ration Book II may apply at his local War Price and Rationing Board for additional points. The consumer must submit a written statement of a licensed physician showing why he must have more canned milk, the amount needed during the succeeding two months and why unrationed foods cannot be used instead. A supplemental allotment to acquire canned evaporated and condensed milk needed by a hospital to meet the dietary needs of its patients may be obtained on application to its local War Price and Rationing Board. It is understood that, if the present method of rationing does not make evaporated milk available in all areas for infants and children, some more effective method will be worked out.

The Office of Price Administration has issued an amendment to ration order number 16 (R. O. 16, amendment 25) which permits the use of rationed fats and oils for external therapeutic purposes. This includes the use of vegetable oils, such as cottonseed oil, for bathing newborn infants, for external application in skin diseases, for urethral injection or lubrication of urethral instruments, and for x-ray visualization. Such use of rationed fats and oils is defined as "industrial consumption" and persons using these products for such purposes are classified as "industrial consumers." An industrial consumer engaged in the care and treatment of the sick and needing rationed fats and oils for this purpose may apply to his district Office of Price Administration for a certificate with which to acquire them. The procedure to be followed, briefly, is as follows: The application should be made on form R-1605 to the district office. If the applicant is a hospital the district office will pass on the application by using the same method of computing allowances as the local boards use in computing allotments for industrial users; otherwise the application will be forwarded to the Washington office for action. If the applicant requires more than he would receive by the method of computation described, he should also submit form R-315 stating the reasons for such request. An "industrial consumer" to whom a certificate is issued for "industrial consumption" of rationed fats and oils may use it only to acquire the foods for which application was made and may use those foods only for the purpose for which the application was granted.

For several months the Office of Price Administration and medical authorities have been studying the hospital problem with a view to developing a uniform procedure covering the granting of supplemental allotments for hospitals. Solution of the problem is believed near. In the meantime a provision in the regulations (section 11.6 of general ration order 5) should enable hospitals to obtain the necessary supplemental allotments so that patients need not suffer from dietary deficiency. This provision gives local boards authority to grant such allotments to meet the dietary requirements of patients living in and receiving care in hospitals whether or not such patients are on special diets. In determining the amount of the supplemental allotment of processed foods and the commodities covered by ration order 16, the local board will take into consideration the availability of fresh fruits and vegetables, unrationed substitutions such as poultry and fresh fish, and the physical facilities of hospitals to process and store such foods.

Woman's Auxiliary to the Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

Alexandria.

The Auxiliary to the Alexandria Medical Society met on June 7th at the Laura Lee Candy House with Mrs. Nathan Schuman, president, presiding. A review of the projects for the past year was given. These include a contribution toward the purchase of a microtome for the Alexandria Hospital Laboratory; contributions to the *Gazette* Pipe Fund, the Red Cross Drive, and the U. S. O.; a bond donated to the Jane Todd Memorial Fund; redecoration of the doctors' lounge at the Hospital; and a three-year scholarship for a student nurse entering the nursing school on September 1st. The Auxiliary also took an active part in the cancer drive, and Red Cross sewing replaced all planned programs at the monthly meetings.

The Norfolk Auxiliary

Met on May 5th in the Library of the Medical Arts Building. Delegates and alternates to the State meeting were named as follows: Delegates—Mrs. R. M. Reynolds, Mrs. Southgate Leigh, Jr., Mrs. C. M. McCoy, Mrs. Charles H. Lupton, and Mrs. S. Byron Pope; alternates—Mrs. K. K. Wallace, Mrs. M. F. Brock, Mrs. Albert G. Horton, Mrs. J. W. Anderson, and Mrs. G. W. Simpson.

Mrs. Albert Horton was named chairman of the U. S. O. dances which the Auxiliary sponsors on the first Tuesday of each month. Members of her committee are Mrs. J. W. Anderson and Mrs. Walter P. Adams.

Members were reported to have filled thirty ditty bags for service men.

The Auxiliary adjourned until the fall when the President, Mrs. W. E. Butler, will entertain at a tea.

MRS. BROCK D. JONES, *Chairman*
Press and Publicity.

Book Announcements

Mental Illness: A Guide for the Family. By EDITH M. STERN. With the Collaboration of SAMUEL W. HAMILTON, M.D. New York. The Commonwealth Fund. 1942. xvii-134 pages. Cloth. Price $1.00

This little volume is, as its title suggests, a handbook of guidance for the baffled layman who must for the first time face the problem of mental illness. The author has apparently made a thorough study of all the aspects of mental illness that the layman encounters and, in addition, has had the collaboration of Dr. Samuel W. Hamilton, Mental Hospital Advisor, U. S. Public Health Service. The book discusses in an authoritative manner the questions of hospitalization, commitment, treatment and prognosis of mental illness. The choice between private and state supported hospitals is wisely discussed. An attempt is made to inculcate in the family of the

mentally ill person the proper attitudes toward this type of disease and to explain how best they may cooperate with the physician and hospital authorities. The final chapter entitled "There's More You Can Do" is a well-phrased appeal for the support of the mental hygiene movement.

The author's approach is sound and adequate and her facts accurate and clearly presented. The appendix contains information about methods of commitment and supervision of mental hospitals in the various states, a valuable glossary of technical terms used, and a list of the various state and national mental hygiene societies.

The professional neuropsychiatrist will have no need for such a handbook. The average physician, however, whose contact with mental illness is casual and infrequent, will find here a very important store of information to aid him in guiding the perplexed relatives of the mentally ill patient when the occasion does arise. To the confused and frightened family of the psychotic patient this guide-book should prove invaluable.

L. D. POLICOFF, M.D.

Man in Structure and Function. By FRITZ KAHN, M.D., Translated from the German and edited by George Rosen, M.D. Alfred A. Knopf, New York, 1943. Vol. 1—341 pp., 207 illustrations; Vol. 2—398 pp., 254 illustrations. Price $10.00.

These two volumes are the best discussion of physiology for the layman that I have ever seen. The various systems are taken up, such as skeleton, muscles, circulation and digestion, and illustrated by clever and original drawings and photographs. In fact, the many drawings of tissues in perspective will be of interest to physicians who from a too intimate knowledge of the two dimensional histologic preparation, often find it difficult to visualize the true microscopic status of tissues. The book reads easily, and is written in an interesting and simple style. Were it not for the price, and the many minor errors, it would serve exceedingly well for elementary courses in physiology as in college, and for pharmacy students. It is not merely an explanation of normal function, but discusses briefly what every layman is correctly interested in, as cerebral hemorrhage, sunstroke, and heat exhaustion.

Unfortunately, the books are replete with small errors which are annoying: the constant spellings *metre* and *dextrine* are a stumbling block for those used to proof reading; page VI: "A crystal no larger than a gram of dust; page 7: "Milk . . . reveals to the microscopist the millions of silvery fat globules and protein particles"; page 9: ". . . each cell is 0.0008 in. long, so that over 8000 cells could be put side by side along one edge of a cubic inch . . .".

Some of the author's physiology may be characterized by that term, so complimentary to furniture, but of dubious value in science: *antique*. For example, p. 195, there is restated the idea that during digestion blood is diverted to the alimentary tract, producing cerebral ischemia; p. 301, he still ascribes to the epiglottis the function of covering the trachea during swallowing; on pages 386 and 398 is the statement that it is ergosterol in milk and human skin that is irradiated to vitamin D. The commercial canners will not appreciate his statement (p. 392) that one will develop scurvy when living on canned foods.

Others of the author's ideas are either too ancient to be recognizable, or else are extremely novel, as on page 213, where he states that the reticulo-endothelial cells prepare a hormone from certain constituents of red cells, which stimulates the red bone marrow to greater erythrocyte production. On page 217, he states that after a blood transfusion, the foreign red cells disintegrate after four to twenty hours; on page 310, that secretin stimulates the gastric glands; p. 402 "alcohol . . . stimulates the brain". The author's endocrinology is especially on the addled side: p. 728 "excess quantities of the egg maturation hormone (?) leave the body with the urine; p. 730, for the hormonal test of pregnancy, "urine is injected into a virgin mouse"; p. 730, "If the corpus luteum is destroyed the child dies in the uterus".

Why, O why, don't publishers have such manuscripts read by someone of mild intelligence and a general knowledge of physiology like ye reviewer (Adv.) before publishing? And why didn't the publisher mark the back of the volumes 1 and 2, in order to distinguish between them? In any case, the book is worth looking at for the pictures alone, and can be recommended to patients who want to know something of that mechanism with which they have to put up as long as they live.

R. J. M.

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VOL. 70 AUGUST, 1943 No. 8

War Babies

THAT there has been a great increase in the number of babies needs no statistical proof. Pregnant ladies are to be seen on every hand. In fact some ladies who are not pregnant and who have no hope of becoming pregnant complain of being conspicuous when they go on the street. The situation is by no means confined to this country. Letters from North Africa express the belief that there is scarcely a woman there between 15 and 45 years who is not pregnant. Is it the result of a cosmic urge to replace inevitable losses or are there more tangible reasons? In the present war a new baby is a financial asset if the husband is in the Armed Forces. However, this was not the case in previous wars when there was also a marked increase in birth rate. A short range view either by the individual or the community should be against having babies at this time. One would think that the individual would hesitate to take on added responsibilities when the future is so uncertain. There is a shortage of everything in civilian life except babies and victory gardens. Perhaps the same psychology underlies both of these excesses.

The nation needs women in industry to take the place of the men who have gone to war. Already nineteen millions have war jobs. It would seem that there would be no time to have babies. But this is a mere man's opinion. What the women think, or do, is another matter. We have asked a number of them their opinion upon the matter and this is what they say:

"A large number of war babies may be said to have been conceived out of the emotional longing of the wife to have some part of her husband left to her, should he go overseas and be killed in action. Other couples, more advanced in age and faced by the possibility of a long separation, may realize that if they do not have the baby they had been intending to have for years, it may be too late. They feel that it is either now or never." Another expresses her reasons somewhat differently: "In the midst

of so much confusion we all feel the need of anchorage and stability, a real purpose in living and something definite to tie to. A baby can be a practical material expression of a spiritual need." Improvment of the family's economic status is a commonly given reason, "Now we can afford one." Some have mentioned the warbride who rushes into matrimony because of the soldier's short leave, and has no time to get contraceptive advice. Most mention the abandonment of increased emotional stress.

A not unimportant factor must be the increased fertility of the soldier. Millions of American men are getting better food, and better balanced food than they have ever gotten in their lives. They live more out-of-doors than ever before. In addition they get a physical training that puts them in the pink of perfection. They are better men than they used to be.

Will the Three-Year Plan Last?

THE new color scheme on the campuses brings new problems and suggests new questions. The khaki-clad students are embarked on the first nationwide accelerated program of medical education. The medical course will consist of thirty-two months of continuous training and will be followed by a year's training in a hospital as interne. The premedical education will be squeezed into fifteen months. Naturally it will be quite strenuous. In fact provision is made for a 66% scholastic mortality. Those who are accepted for this training will have supplied to them their clothing, their books and their tuition fees, $2.50 to $3.00 per day subsistence plus the pay of a private. They will live under army discipline. They will have no say as to which school they will be assigned. The medical schools are asked not to lower their present high standards. This increased load must be borne by faculties that are already depleted. That they will measure up to what is expected of them, there is no doubt. The medical profession has always met its responsibilities. This tradition is as strong in the medical profession as the one in the theatrical profession that "the show must go on".

Whether the accelerated program will outlast the Duration is an interesting question. Much can be said in its favor. The medical curriculum had been loaded and stretched until the average graduate was well in his thirties before he was in a position to serve his community. He had spent from two to four years in college, four years in medical school and from three to five years in hospital training. Even before the present emergency, efforts had been made to shorten this time. In some universities the collegiate and the medical courses could be telescoped. Some of the basic sciences of the first two years of the medical course could be counted towards an academic degree so that the student could get his B. S. degree at the end of his second year in medicine and his M. D. degree after a combined course of six years. At least two medical schools were already teaching the entire year, and the student, if he elected, could complete the customary four years of medical instruction in three calendar years.

American educational systems have been built around the central idea of a summer vacation for so long that we have grown to believe it is necessary. But is it? We are no longer an agricultural people and the long summer vacation is wasted time to most students. The faculty look on this as their own especial time, necessary for their recovery from the strenuous winter teaching. If this is really valid, the faculties can be enlarged so that the necessary recovery periods can be provided for individual members. It is also argued that many students need the summer vacations in order to earn money with which to go to school the following year. This is economically unsound. By beginning his practice one and a half to two years earlier he would earn more

than he would clerking in a summer hotel the four or five summers of his collegiate and medical college career, provided he could get the job in the first place. But even granting that the occasional student could not arrange for his academic expenses, the summer studying could be optional as it was before the war in the two schools that had begun this plan.

At present there are certain difficulties and frictions that have to be ironed out. For instance, the preparatory schools have not geared their courses to that of the colleges and the colleges to the medical schools, so that unnecessary time is lost between the one and the other. Then, too, many hospitals are accustomed to signing up internes for a year beginning the first of July. There is no real reason why the hospitals should not take the new internes whenever they graduate. As a matter of fact, a new crop of internes every four months instead of the entire staff being renewed once a year, would make for a more uniform service to the patient, although it might complicate the interne instruction somewhat.

It is to be hoped that the accelerated plan will be so streamlined that it will not only furnish the Armed Forces with the needed medical personnel, but will also provide an extensive experiment in medical education to determine whether the post-war medical students' time can be conserved in like manner.

Societies

Tazewell County Medical Society.

At the meeting of this Society held on July 8th, the following officers were elected: President, Dr. J. W. Witten, North Tazewell; vice-president, Dr. W. C. Jackson, Amonate; and secretary-treasurer, Dr. J. A. Robinson, Richlands. Dr. Hampton St. Clair of Bluefield, W. Va., read a paper on "The Surgical Management of the Ruptured Appendix".

Alexandria Medical Society.

At a recent meeting of this Society, the following officers were elected: President, Dr. S. H. Williams; vice-president, Dr. C. E. Arnette; and secretary-treasurer, Dr. Alfred Abramson. Delegate and alternate to the State Society were also named at this time.

Dickenson-Buchanan County Medical Society.

At its regular monthly meeting on July 21st, the subject of "Mouth Infection" was presented. At the May meeting, delegates and alternates to the State Society were appointed.

Dr. J. C. Trivett, Page, is president of this Society and Dr. T. C. Sutherland, Haysi, secretary-treasurer.

Mark Your Calendar Now and Make Plans to Attend
the Meeting of the
Medical Society of Virginia
in Roanoke, October 25, 26, and 27

News

News from the Medical College of Virginia.

The alumni of the college in Puerto Rico recently presented a $500.00 War Bond as a gift to their alma mater in appreciation of the service of the institution to them.

A grant of $5,000 has been made by the W. K. Kellogg Foundation for loans to students in the school of dentistry. This is the second grant made by the foundation for such loans.

Mr. J. P. Finnegan joined the faculty of the college on July 1 as research assistant in pharmacology, coming to us from the University of California department of pharmacology.

Dr. Miriam Clarke on July 1 replaced Dr. L. D. Abbott, assistant professor of biochemistry, who has enlisted in the navy. Dr. Clarke is a graduate of Yale University in physical chemistry. She will act as research associate in biochemistry. She has had excellent teaching and research experience.

Mr. Geoffrey Jefferson, Manchester, England, chief consultant in neurosurgery for the British government, was the recent guest of Dr. C. C. Coleman, professor of neurological surgery. Mr. Jefferson was making a tour of the main neurosurgical clinics of the United States.

Dr. E. I. Evans, assistant professor of surgery, attended the meting of the shock committee of the National Research Council in New Haven, Connecticut, July 11 and 12, reporting on the research work in shock being done at the college.

The Medical Society of the State of North Carolina

Installed Dr. James W. Vernon of Morganton as president for the year 1943-4, at its recent meeting held in Raleigh. Dr. Paul F. Whitaker of Kinston was chosen president-elect, Drs. Frederic C. Hubbard of Wilkesboro and George L. Carrington of Burlington vice-presidents, and Dr. Roscoe D. McMillan of Red Springs was re-elected secretary-treasurer. The 1944 session will be held at Pinehurst.

Dr. Hawes Campbell, Jr.,

Has located in Staunton, where he is connected with the staff of the Western State Hospital.

Married.

Dr. Alexander Spotswood Robins, Richmond, and Miss Sarah Emma Hutcherson, Reidsville, N. C., July 28th. Dr. Robins is a graduate of the Medical College of Virginia in 1936.

Dr. Maurice Sidney Vitsky and Miss Betty Jane Wallerstein, both of Richmond, June 27th. Dr. Vitsky graduated from the Medical College of Virginia in 1942 and is now in the Medical Corps of the U. S. Navy.

Promotions in the Service.

This office has been notified of the following promotions of members of the Medical Society of Virginia who are now serving in the medical corps of the U. S. Army:

Dr. Edward H. Williams, Richmond, to Lieutenant-Colonel.

Dr. Wilbur R. Southward, Jr., Richmond, to Lieutenant-Colonel.

Dr. W. L. Ball, Richmond, to Lieutenant-Colonel.
Dr. J. F. Waddill, Norfolk, to Lieutenant-Colonel.
Dr. Roger G. Magruder, Charlottesville, to Major.
Dr. H. D. Fitzpatrick, Radford, to Major.
Dr. George D. Vermilya, Richlands, to Major.
Dr. T. Addison Morgan, Franklin, to Major.
Dr. Fletcher L. Raiford, Franklin, to Captain.
Dr. B. Randolph Allen, Suffolk, to Captain.
Dr. R. Bruce Mallett, Orange, to Captain.

The National Society for the Prevention of Blindness

Announces that a prize of $250 will be awarded for the most original paper adding to the present knowledge about medical treatment of non-congestive glaucoma. Papers should be in the office of the Society, 1790 Broadway, New York City, by September, 1944. (This prize is being offered in addition to one that was previously announced for the most valuable original paper concerning the diagnosis of early glaucoma.)

Papers may be presented by any practicing ophthalmologist of the Western Hemisphere and may be

written in English, French, German, Italian, Spanish and Portuguese, but those written in any of the last four languages should be accompanied by a translation in English.

The award will be made by the Society with the guidance of an ophthalmological committee composed of Doctors Evans, Keil, Kirby, McLean, Reese, Samuels, Schlivek, Schoenberg and Webster.

Dr. Tom A. Williams,

Formerly of Washington, D. C., is now located in Asheville, North Carolina, where he is directing the City Clinic for Mental Hygiene.

Dr. S. H. Macht,

Formerly of Crewe, is now at the Jefferson Hospital, Philadelphia, where he is taking special training in x-ray for the next year.

Dr. William Bickers,

Richmond, has just returned from the Elizabeth Steel Magee Hospital of the University of Pittsburgh, where he spent a month investigating research problems in the field of gynecologic endocrinology.

Dr. Leslie M. Bell,

Winchester, has recently been certified as a Diplomate of the American Board of Surgery.

The American Congress of Physical Therapy

Will hold its twenty-second annual scientific and clinical session, September 8-11, at the Palmer House, Chicago. The annual instruction course, including round table discussion groups, will be held the first three days, as well as the scientific and clinical sessions. All of these sessions will be open to the members of the regular medical profession and their qualified aids. For further information, address the American Congress of Physical Therapy, 30 North Michigan Avenue, Chicago.

Dr. M. Pierce Rucker,

Richmond, was a member of the faculty for the Graduate Short Course for Doctors of Medicine, held in Jacksonville, Fla., June 21-26, and had charge of the section on obstetrics. This course is presented each year by the Department of Medicine of the Graduate School of the University of Florida in cooperation with the Florida Medical Association and the Florida State Board of Health.

Medical Society of the District of Columbia.

At the annual meeting of the Society in May, Dr. James N. Greear, Jr., was named president-elect for the coming year, and Drs. Custis Lee Hall and Carolyn Pincock vice-presidents. Dr. Fred R. Sanderson succeeded to the presidency on July 1st.

Dr. Ross Golden

Of New York, one of the guest speakers at the joint meeting of the Virginia-West Virginia meeting at White Sulphur Springs, W. Va., in 1940, was elected president of the American College of Radiology, at its annual meeting in Chicago in June.

Quarterly Review of Obstetrics and Gynecology.

The first number of the "Review" is a very attractive volume. Its aims and objects are set forth in the following introduction by Dr. Nicholas J. Eastman:

There has long been need for an abstract journal of Obstetrics and Gynecology in the English language. Such a periodical serves several purposes. In the first place it calls to the notice of the reader a vast array of articles which he would otherwise miss; and some of these he may find of special interest and value. Secondly, if the papers are well selected and comprehensively abstracted, a publication of this kind is a valuable time saver,—surely, no small consideration in these hurried days when the pressure of practice leaves little time for medical literature. Finally, the bound volumes of an abstract journal, when properly indexed, constitute a most useful reference work in which the whole recent literature on any given subject may be reviewed in sequence.

That great and scholarly German abstract journal, *Berichte über die Gesamte Gynäkologie und Geburtshilfe,* which covered not only obstetrics and gynecology but certain related fields, was for many years a model of its kind. This is no longer available and it will doubtless be many years (if ever) before it attains its pre-war calibre; moreover, even in its prime the Berichte could be found in only a few of the larger medical libraries in this country and reached but a handful of American practitioners. It is particularly fitting, therefore, that an abstract journal in the English language be launched.

The Quarterly Review of Obstetrics and Gynecology represents a beginning in this direction. It is hoped that succeeding issues will cover an increasing number of articles and that with the post-war period each issue will provide a comprehensive and up-to-the-minute survey of the entire world's literature in this field.

Dr. Clifton R. Titus

Is now located at Box 376, Bedford. He was formerly at Bassett.

Dr. George C. Snead,

Recently of Covington, is now located in Derby where he is engaged in industrial practice.

Dr. Ben M. Kagan,

Richmond, has been made a member of the American Academy of Pediatrics and also become a licentiate of the American Board of Pediatrics last December. He is now a Lieutenant in the Medical Corps of the U. S. Army and stationed at Orangeburg, N. Y.

Rotary Club Officers.

Drs. William H. Higgins and Herbert T. Wagner were recently elected as members of the Board of Directors of the Richmond Rotary Club.

Dr. T. Dewey Davis

Was recently elected president of the Richmond Tuberculosis Association to fill the unexpired term of Captain Fred W. Scott, resigned. Dr. Davis has served as a member of the board of directors for many years and has been chairman of the medical committee and the annual early diagnosis campaign as well as a member of the executive committee.

Dr. William T. Graham,

Richmond, has been reappointed by Governor Darden as a member of the State Board of Health. He has been a member for thirty years and is now president of this body.

American Public Health Association.

The Wartime Conference and 72nd Annual Business Meeting of this Association will be held in New York City, October 12-14, with headquarters at the Hotel Pennsylvania. Health workers within easy access of New York City are invited to attend. The conference program will be carried in the September issue of the *American Journal of Public Health*, and further information may be obtained from the Association at 1790 Broadway, New York 19, N. Y.

Dr. Alfred Chambers Ray,

Formerly of Ashland, has been appointed the first full-time resident of the Richmond City Home. He will work in conjunction with a consulting staff of 13 physicians.

Major Harry J. Warthen, Jr., MC.,

Has recently returned to Atlantic City after taking the course in Aviation Medicine at Randolph Field, Texas, and Nashville, Tennessee.

The Raiford Memorial Hospital,

Franklin, sponsored a summer clinic on July 15th. This was attended by thirty-four physicians and others are planned for August and September. The program was as follows: V-D Control Method by Dr. Raymond Kimbrough, Norfolk; and Recent Advances in Vitamin Therapy and Clinical Manifestations of their Deficiencies by Dr. J. D. Hough, chief of the Internal Medicine Department of the Raiford Hospital.

Dr. Raymond A. Vonderlehr

Has been appointed director of District No. 6 of the U.S.P.H.S., covering Puerto Rico and the Virgin Islands. He is a native of Richmond and a graduate of the Medical College of Virginia. Dr. Vonderlehr has just completed eight years as assistant surgeon-general in charge of the division of venereal disease, and was stationed in Washington.

Dr. E. G. Gill,

Roanoke, was installed as President of Lions International at its annual meeting in Cleveland on July 20th.

New Books.

The following are recent acquisitions to the library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Adolph, E. F.—Physiological regulations.
Alschuler, Rose H.—Children's centers.
Amar, Jules—The human motor, or the scientific foundations of labour and industry.
American Association for the Advancement of Science—Alcohol explored.
Bennett, H.—Chemical formulary. Vol. 6.
Boyle—Fractures of the jaws.
Cobb, Stanley—Foundations of neuropsychiatry.

Cutler, Condict W., Jr.—The hand: its disabilities and diseases.

Flikke, Julia O.—Nurses in action.

Galdston, Iago—Behind the sulfa drugs.

Ham, A. W. & Salter, M. D.—Doctor in the making; the art of being a medical student.

Henderson, Yandell & Haggard, H. W.—Noxious gases and the principles of respiration influencing their action.

Herrold, Russell D.—Chemotherapy of gonococcic infections.

Hinsie, L. E. & Shatzky, J.—Psychiatric dictionary with encyclopedic treatment of modern terms.

Hume, Edgar Erskine—Victories of army medicine.

Huxley, Julian—Evolution.

Kampmeier, Rudolph—Essentials of syphilology.

King, E. S. J.—Surgery of the heart.

Mayer, A. W.—Chemical-technical dictionary.

Mills, Clarence A.—Climate makes the man.

National Research Council—Manual of industrial hygiene.

Needham, Jos.—Biochemistry and morphogenesis.

Pattison, H. A.—Rehabilitation of the tuberculous.

Plesch, J.—Heart and blood vessels.

Roussy, G. et Oberling—Atlas du cancer.

Sappington, C. O.—Essentials of industrial medicine.

Spemann, H.—Embryonic development and induction.

Sumner & Somers—Chemistry and methods of enzymes.

van Dyke, H. B., and others—Protein hormones of the pituitary body.

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Obituaries

Dr. William Reese Williams,

Prominent Southwestern Virginia physician, died at his home in Richlands on July 17th. He was seventy years of age and a graduate of the Medical College of Virginia in 1897. Dr. Williams located for practice in Richlands in 1898. In 1915 he built the Mattie Williams Hospital there and in 1937 established the Hospital at Grundy. He was prominent in civic and political affairs and was the first president of the Richlands Rotary Club. Dr. Williams was a member of the State Board of Health and was very active in the work of the Tazewell County Medical Society. He joined the Medical Society of Virginia in 1897 and served as vice-president in 1941-2. His wife and five children survive him. A son is Dr. James Peery Williams, lieutenant-commander in the U. S. Navy.

Dr. Adam McClintic Byrd,

Bluefield, W. Va., died July 4th, after a week's illness. He was seventy-five years of age and a graduate of the Medical College of Virginia in 1898. Dr. Byrd practiced for sometime in Virginia at Richlands and North Fork, before locating in Bluefield. He was a member of the Medical Society of Virginia, having joined in 1904. A brother survives him.

Dr. Willard Bellamy Robinson,

Richmond, died July 4th. He was eighty-one years of age and graduated from the Kentucky School of Medicine, Louisville, in 1886. Dr. Robinson practiced at Tappahannock for sixteen years before moving to Richmond. He was formerly a member of the Medical Society of Virginia. His wife and three children survive him.

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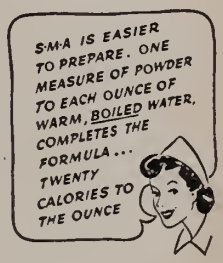

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[1]Lesser: New Eng. Jl. Med., 228:185, 1943. [2]Lesser: New Eng. Jl. Med., 226:51, 1942. [3]Homm: Jl. Clin. Endo., 2:325, 1942. [4]Walker: Jl. Clin. Endo., 2:560, 1942; M. Rec. & Ann., 34:667, 1940. [5]McGavack: Jl. Clin. Endo., 3:71, 1943

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Official Publication of the Medical Society of Virginia

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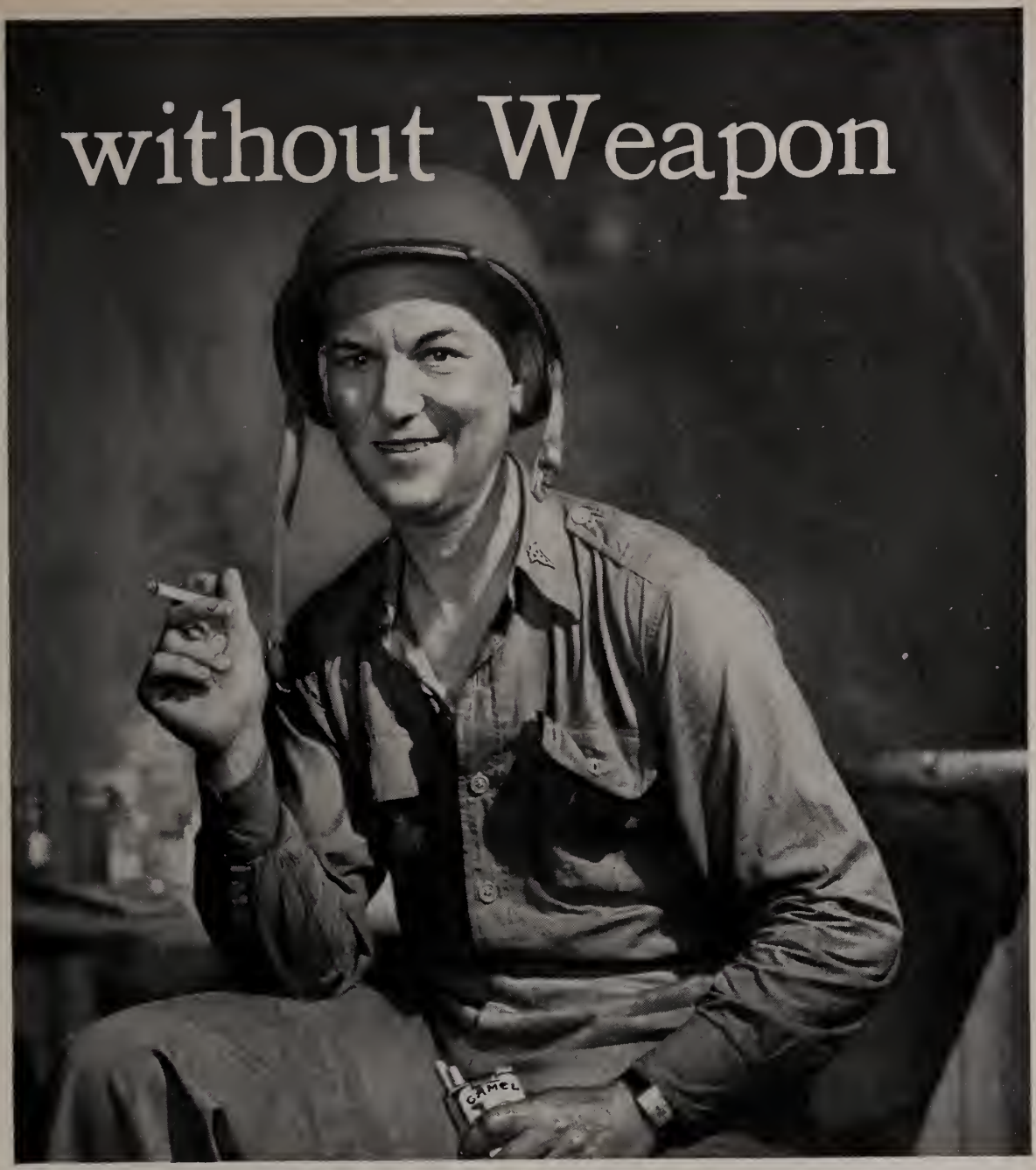

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RICHMOND, VA., SEPTEMBER, 1943.

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Guest Editorial

The Changing Concept Concerning the Surgical Management of Diverticulitis

WHILE diverticula formation in the colon was described nearly a century ago by Cruveilhier, sufficient information concerning the clinical course of its complications has been accumulated only within recent years to permit accurate conclusions concerning their management. The treatment of uncomplicated diverticulitis, by general agreement, continues to be left in the hands of the internist. Since 1907, however, when W. J. Mayo reported the resection of portions of the sigmoid for diverticulitis in 5 cases, the surgeon has considered that the presence of complications such as stenosing peri-diverticulitis, colo-vesical fistula or abscess transfers the lesion to his particular field. It is an interesting commentary, incidentally, that hemorrhage from the bowel, which has been a frequent presenting symptom in individuals with diverticulosis coming under our observation, is not a complication requiring surgical intervention. Bleeding, whether constant and slight in amount or spontaneous, massive and dark, presents a serious diagnostic problem but has not in our experience required radical treatment.

A general opinion obtained for some years that carcinoma was likely to be found in association with inflammation of diverticula. Louis Wilson, in 1911, found four cases of carcinoma in association with diverticula of the colon in a total of 15 specimens, and the publication of his findings and other similar observations were no doubt responsible for this opinion. During the period referred to many surgeons concluded that since so intimate an association existed between the inflammatory process and malignant lesions, the primary resection of stenosing tumefactions in the sigmoid was justifiable—a conclusion which tremendously increased surgical mortality. The study of larger series of cases in recent years has indicated that this relationship is so rare that it may be regarded as purely coincidental. Since carcinoma and diverticulitis are both lesions which occur chiefly in the left colon of elderly individuals, it is to be expected that both lesions would occasionally occur simultaneously. Our own experience records only one such instance.

Rankin and Brown found only four accompanying carcinomas in a series of 227 cases of diverticulitis. There is no question that this parallelism has been over emphasized in the past and there is no doubt that it has been responsible for much ill-advised surgery. As the spectre of malignant degeneration receded reports accumu-

lated indicating that primary procedures on inflamed bowel carry a high mortality. For this reason, colostomy accompanied by a minimum of exploratory manipulation came into favor as a preliminary to resection. This procedure was advocated where resistant obstruction developed, where fistulas to the bladder or abdominal wall occurred and where pelvic abscess was present or impending. In the beginning the fecal diversion was accomplished by exposing a loop of the left colon above the lesion. Experience tended to demonstrate however that manipulation of the nearby colon was not without risk and that if further surgical procedures were indicated involvement of the descending or sigmoid colon in a colostomy emphatically limited the scope of secondary resection. For these reasons the transverse colon is now regarded as the safest and most logical site for the abdominal anus.

It was then noted that when a colostomy is performed and the fecal current diverted the peri-diverticulitis and the accompanying perisigmoidal inflammatory reaction will subside, in many instances to the extent that the bowel will appear almost normal when visualized radiographically. This does not happen, however, in a relatively short time and if the process is sufficiently severe to warrant a colostomy a number of surgeons agreed that the diversion of the fecal current should be maintained for approximately a year and that at the end of this time the stoma should be closed. Since complete and long continued diversion of the current was regarded as quite important the technique for transverse colostomy which had been described by Sir Hugh Devine appeared exceptionally appropriate.

Among the advantages claimed were that the left side of the colon is completely defunctionalized, as no fecal material can enter the distal stoma, and that liquid feces are not constantly discharged onto the skin with inconvenience to the patient from the resultant digestion and often severe and extensive irritation of the skin surrounding the colostomy opening.

Devine emphasized his opinion that the lower portion of the bowel by disuse and daily irrigations with saline or antiseptic solutions could, over a period of weeks, be rendered practically free of organisms.

The procedure originally described by Devine consists of making an upper right rectus incision, suturing together the adjacent surfaces of a loop of the transverse colon to form a long (about 10 cm.) spur, passing Ochsner clamps through stab wounds, one on either side of the longitudinal incision, and, with the clamps applied above the spur, cutting the bowel in two with the cautery and pulling the severed ends through the stab wounds. The longitudinal incision is then closed, with the upper end of the spur, from which the two limbs of the colostomy diverge, pulled up against the under-surface of the peritoneum.

The outstanding disadvantage of this procedure is the danger of contamination and possible wound infection from pulling the severed ends of the colon through the stab wounds. It is possible also to injure the blood supply to the cut ends of the bowel in pulling them through the small stab wounds. To obviate this the technic has been modified, and we think improved, by Alton Ochsner and his associates: a transverse incision is made down to the fascia, which with the peritoneum is incised longitudinally. The spur is formed in the same manner; clamps are applied above the spur; the bowel is divided completely with the cautery, and the limbs of the severed colon are brought out at the respective ends of the transverse incision. Closure is made with the spur in the same relation to the under-surface of the peritoneum.

Definite disadvantages are, however, associated with the Devine procedure; the final closure of the two openings is difficult and not without peril and the transverse colon is left with considerable deformity. If the artificial anus is the sole surgical step contemplated and is to be carried a year, these advantages may be justified.

Within very recent years we have observed in our own work that individuals with diverticulitis who have carried a colostomy for a long period, and having clinically recovered have had the stoma of the abdominal anus closed, have not infrequently presented themselves later with disturbing recurrences of their disease. The inflammatory reaction may reappear with consequent stenosis, a tumefaction in the sigmoid may descend into the lower pelvis and produce pain, apparently quiescent bladder symptoms present themselves anew or the patient may suffer from chronic obstipation. This experience has convinced us that an individual whose lesion has progressed to the stage where surgery is indicated should in practically all instances be given a colostomy as a preliminary step to be followed after a few months by resection of the segment of bowel involved. This new concept has been discussed with a number of competent observers and it will be interesting to record the present opinion of two of them. A personal communication from Dr. J. Arnold Bargen states: "About 15 per cent of the patients with recurrent attacks of diverticulitis develop obstructive or perforative symptoms severe enough to warrant surgery. Some years ago colostomy alone was performed and the segment of the bowel distal to the colostomy was left intact. Later on, the colostomy was closed without further surgery. In a few of these cases there was a recurrence of the diverticulitis. The difficulty about making a second colostomy were such as to make us feel that once the patient has come to the stage of colostomy, it is probably best to resect the diseased segment of the sigmoid." I find that Dr. John DeJ. Pemberton holds a similar opinion. "When obstructive symptoms, abscess or fistula develops, I feel that surgery is indicated. It is not feasible to make a direct attack on the involved segment because of the technical difficulties; instead, a colostomy should be established. Occasionally, because of the marked subsidence of the inflammation, one is tempted to close the colostomy without resecting the segment of bowel involved. I have done this on several occasions, often followed by recurrence of the inflammatory process. When the process has been severe enough to necessitate the establishment of a colostomy, it is far wiser to follow up later by an operation for removal of the affected segment of bowel than to close the colostomy."

It is for this reason that I have abandoned the use of the Devine colostomy in connection with diverticulitis. While the Mikulicz procedure on the transverse colon results in an intestinal stoma more difficult to regulate and while more attention must be paid to the nearby epidermis, the patient is not required to suffer this annoyance for an extended period and the more simple technique required to close this type of colostomy offers a distinct advantage.

CURTICE ROSSER, M.D., F.A.C.S.*

---

*Dr. Rosser is Professor of proctology at Southwestern Foundation Medical School in Dallas. He conducts a large clinic there and has done considerable research work. He is recognized as an authority on diseases of the lower intestinal tract. He was President of the American Proctologic Society in 1932 and 1933, is a Fellow of the Southern Association and a Councillor of the Southern Medical Association.

INFANTS OF DIABETIC MOTHERS*

PRISCILLA WHITE, M.D.,
Boston, Massachusetts.

The problem of pregnancy complicating diabetes is controversial. It is controversial primarily in the four following respects: first, fetal survival; second, the characteristics of the infants of diabetic mothers; third, the clinical course of the mother, and, fourth, the need for special care of the infant and the mother.

Confusion and controversy have arisen in this problem because physicians are not always dealing with comparable cases. Some workers have studied predominantly diabetes occurring during the course of pregnancy, whereas others have studied pregnancies occurring during the course of well established diabetes. This discussion presents the facts and interpretations of the data derived from a series of patients of the latter type, 92 per cent of whom had well established diabetes prior to pregnancy and in only 8 per cent was the diabetes recognized during the pregnancy. The series was comprised of 125 consecutive pregnancies occurring in 119 different diabetic patients. They were treated between January, 1936, and July, 1942. Only patients carried successfully to the 24th week are included.

Maternal mortality was not the problem in this series. It has not been the problem in any series of diabetic mothers since the inauguration of insulin treatment. There was one maternal death, or a maternal mortality rate of 0.8 per cent. Seventeen of the fetuses in this series of 125 died, making the fetal mortality rate 12 per cent. The causes of death were as follows: macerated stillbirth 6, atelectasis 6, subtentorial hemorrhage 2, hemorrhagic disease in the newborn 1, defect of the skull 1, and erythroblastosis 1. Comparable fetal mortality[1-6] is reported from this level to as high as 35 per cent. If one includes the entire forty weeks of pregnancy, fetal mortality has been reported as high as 50 per cent, nearly every other infant of a diabetic mother being lost in early spontaneous abortion, miscarriage, stillbirth or neonatal death.

From these statements it appears true that when pregnancy complicates diabetes, fetal survival is significantly less than it is in the average child-bearing population and that there appears to be a factor in diabetes which is lethal so far as the infant is concerned.

CHARACTERISTICS OF THE INFANTS OF DIABETIC MOTHERS

Over-size was characteristic of the infants in this series of 125 cases. Eighty per cent of the number exceeded the expected weight for age when the standard of Potter and Adair[7] was used. Length as well as weight exceeded the normal. The largest infant was a premature weighing twelve pounds; the smallest infant, also a premature, weighed four pounds.

The weight of the infants of diabetic mothers in this series was influenced by three distinct factors: fat, edema and splanchnomegaly. The excellent nutritional level was evident on simple inspection.

Fat, however, is not the only cause for the weight, because edema which was sometimes visible and pitting or edema evidenced by weight loss greater than the average or by diuresis also greater than normal was characteristic of many of the 125 infants. The weight loss in 72 hours varied from the less than normal of one-tenth of an ounce to twenty-five ounces. Weight loss was twice as great in this group of infants as it was on the average among the infants of normal mothers delivered at the same time and treated in the same fashion at the Faulkner Hospital. The most edematous babies appearing acutely ill have not been weighed, so that the figures for loss of weight are actually lower than they should be. One such infant, however, was weighed at birth and twelve hours later. The loss in this seven-pound infant was exactly one pound in twelve hours.

Splanchnomegaly is the third factor contributing to the body weight. The enlargement was most striking and most frequently seen in the liver, spleen and the heart. It was less evident in the lungs and kidneys. Enlargement of the pancreas, thymus, and adrenal was not so consistently observed. In contrast to the enlargement of these structures, the brain was consistently smaller than normal.

Interesting and important pathological changes

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were noted by the five pathologists who have performed autopsies upon these infants. Microscopic evidence of hematopoiesis of the spleen and liver was observed in fourteen of the seventeen autopsied infants, atelectasis in thirteen, persistence of fetal glomeruli in six and hyperplasia of islets in five. Other pathologists, notably Hertig,[8] have reported glycogen infiltration of the enlarged heart of infants of diabetic mothers. Others[9, 10] have reported relative macrosomia, advanced bone age and more mature genital development than normal.

Physical examinations of the infants of diabetic mothers reveal a general appearance of post-maturity, long hair, and double eyelashes, atelectasis and enlargement of the liver and spleen. Both physical examinations and post-mortem examinations have shown the great frequency of congenital defects. Twenty-two of these 125 infants were known to have had twenty-six defects, so that one in six of the infants of diabetic mothers had a defect compared with one in fifty-five for infants of normal mothers. Interesting and important in this connection is the frequency of congenital anomalies in diabetics. In diabetic patients these anomalies are rarely gross or deforming. In the offspring of diabetics, they are more gross and more deforming. Twice in this series the defects were lethal, once in the neonatal period and once in later infancy.

The clinical behavior of the abnormal infants of our diabetic mothers is characterized chiefly by respiratory difficulty. These infants have atelectasis, shallow, rapid, incomplete breathing, cyanosis and apnea. The temperature is unstable. Fibrillary twitchings are common. Crying further increases the respiratory difficulty. Jaundice develops rapidly in nearly all.

Certain blood chemical determinations have been done; others of importance should be done. The cholesterol was on the average 50 milligrams; the carbon dioxide combining power of the blood varied from as low as 19 volumes per cent to 50 volumes per cent, and the average value for the non-protein nitrogen was 15 milligrams. Blood counts, serum proteins, Rh factors and hormone assays have been too infrequently performed to report at the present time.

The most characteristic chemical deviation from the normal was in the behavior of the sugar of the blood which at birth, whether capillary or cord, was usually higher than the normal of 40 to 60 milligrams. The range was from 20 to 250 milligrams. A precipitous fall is usually observed in four hours, followed by a spontaneous rise in eight hours. None of the infants of this series had clinical symptoms recognizable as those of insulin shock. One infant in an earlier group not included here had symptoms when the sugar of the blood fell to 9 milligrams. The mother was hypoglycemic during delivery.

The composite picture of the typical infant of the diabetic mother is, therefore, as follows: it is larger than the average. Except for the brain, it often has generalized splanchnomegaly. Hematopoiesis of the spleen and liver and islet hyperplasia occur. There appears to be a disturbance of water balance, shown by edema, weight loss, and diuresis. In spite of a mature, even post-mature appearance the clinical behavior is that of prematurity; difficult respiration and unstable temperature regulation as well as jaundice occur. The chemical characteristic most commonly observed to date is self-correcting relative hypoglycemia.

THE MATERNAL COURSE

The maternal course in this series of 125 consecutive pregnancies was largely abnormal. Forty-two per cent of the mothers had preeclamptic toxemia, hypertension and/or albuminuria otherwise not explained, and 25 per cent delivered spontaneously prematurely. Diabetic crises on the other hand were infrequent. One patient only, or 0.8 per cent, had chemical diabetic coma. One other patient only, 0.8 per cent of the series, had severe hypoglycemia. The symptoms and signs of toxemia in these diabetic mothers were mild. In this particular group none progressed to eclampsia, but mild toxemia and the premature deliveries were associated with a high fetal mortality.

The typical clinical course of abnormal pregnancies in diabetic mothers is as follows: in many there is first noted an abnormal gain in weight followed by visible edema, hydramnios, albuminuria and hypertension. With the development of hypertension, premature delivery or an intra-uterine death commonly occurs. If there is an intra-uterine death, it is followed by the disappearance of the clinical signs of toxemia, and later, often many weeks, delivery of a large macerated fetus.[11] Hydramnios with or without edema and without hypertension and albuminuria and intra-uterine death occasionally occurs. Premature delivery without signs of

toxemia may occur. Again, the infant appears mature, but, in spite of the appearance of maturity, usually dies of atelectasis within twenty-four hours.

Three possible causes for the fetal wastage have been studied in this group: first, congenital defects; second, the disturbance of the chemistry of diabetes; and, third, an imbalance of the hormones of pregnancy.

Congenital defects contributed, as previously stated, to one of the seventeen fetal deaths, and to one additional infant death. Congenital defects, therefore, were most certainly not the chief or contributory cause of the deaths in the sixteen other fetal fatalities occurring in the third trimester or neonatal period.

The disturbed chemistry of diabetes has been blamed for fetal loss, and it has been almost universally stated that if diabetes is adequately controlled the survival of the fetus can be assured. Disordered carbohydrate, protein and fat metabolism have been blamed separately and together.

Although acidosis with a shift of the hydrogen ion concentration of the blood to the acid side could theoretically affect the fetus adversely, it was not a factor in this series, for there was only one instance of diabetic coma in 125 cases and it was associated with the survival of the fetus. Interestingly enough, this same mother had a previous stillbirth without complicating diabetic coma. None of the seventeen mothers whose fetuses died had coma or acidosis as shown by carbon dioxide content determinations of the blood or urinary acetone bodies.

Maternal hypoglycemia in our experience was also not associated with fetal death. Accidentally one patient in this series received 270 units of protamine zinc insulin. In spite of glucose administered intravenously, she was hypoglycemic even to the point of unconsciousness for many hours. Later, however, she was delivered of a healthy infant.

Uncontrolled carbohydrate metabolism or hypoglycemia might deplete the placenta of glycogen, but there was no chemical or clinical evidence of this in the seventeen fatal cases, ten of whose mothers were under hospital treatment at the time of the fetal death.

A shift in fluid balance could accompany fluctuations of the level of the sugar of the blood. However, this was not our clinical experience. Our severest case of hydramnios and of generalized edema occurred in a patient who, having lost her first infant, was hospitalized in the latter part of the second and the entire third trimester. She insisted upon five blood sugar determinations daily, all of which were constantly normal, and yet, in spite of perfect control of diabetes, she had the most marked disturbance of water balance in the entire group.

Disordered protein metabolism measured by nitrogen excretion did not occur, for the urinary nitrogen levels of the mothers were consistently low.

Since neither congenital anomalies nor the disturbed chemistry of diabetes in our experience accounted for late fetal death, we turned to the study of the hormones of pregnancy. The 125 cases reported here all had determinations for chorionic gonadotropin, 51 had determinations for pregnanediol and 27 for estrogen. (A detailed report of these cases is to be published in the *Journal of Clinical Endocrinology*). The cases were classified as normal if the level for chorionic gonadotropin between the twenty-fourth and thirty-fourth week lay below 200 rat units per 100 cc. of blood and if the pregnanediol excretion was the minimum of normal according to the curve published by Venning and Browne. In only a few instances did estrogen values influence the classification. Forty-one of the 125 cases were classified as normal on the basis of hormone assays and 84 were classified as abnormal largely upon the same basis. From this, it is evident that a high incidence, two-thirds of these patients, had a measurable imbalance of the hormones of pregnancy.

The eighty-four abnormal cases were divided into two groups. The first twenty-seven were untreated, and the last fifty-seven had hormone therapy in an effort to restore the balance of the sex hormones to normal.

The fetal survival in the forty-one cases classified as normal on the basis of analyses of sex hormones was 95 per cent, comparable with the fetal survival of the average child-bearing population. The fetal survival of the twenty-seven abnormal and untreated cases was 60 per cent. The incidence of toxemia in the forty-one normal cases was 2 per cent; in the twenty-seven abnormal untreated it was 52 per cent. The incidence of prematurity in the forty-one normals was 0; in the twenty-seven abnormals it was 40 per cent. Since the patients with the normal hormonal balance had a normal clinical

course and excellent fetal survival and since the abnormals had a distinctly abnormal clinical course and high fetal wastage, the next step was an attempt to correct the sex hormonal imbalance to see if prematurity could be lessened, toxemia modified, and fetal loss prevented.

Fifty-seven of the eighty-four abnormal cases have received such sex hormone therapy. In this group, fetal survival is 92 per cent; prematurity fell from 40 per cent in the untreated group to 18 per cent, and, when it occurred, it occurred later in the course of pregnancy than in the abnormal untreated group. Toxemia, which was invariably mild, appeared to be modified.

From an intimate study of these patients, rules for management of the fetus and the diabetic mothers have been derived. These are post-natal, delivery, and pre-natal rules. The post-natal rules are: first, oxygen incubation; second, heat; third, dehydration, and, fourth, glucose only if the blood sugar is falling at the end of eight hours.

The time and type of delivery are the obstetrician's choice. Premature delivery of the abnormal hormonal group is the rule. Cesarean section was performed upon 63 per cent. Many of our patients are young and primiparous and Cesarean section seemed the best way to accomplish premature delivery. Sterilization advocated after the second successful pregnancy was the reason for operative delivery in others.

Cesarean sections are done under spinal anesthesia and without sedation. Sedation and late anesthesia are administered in normal deliveries, but are kept at minimum levels, not because of maternal diabetes but because of the fetal respiratory difficulties.

The prenatal care includes the care given to any pregnant woman, adequate treatment of diabetes and hormonal therapy if indicated. The diet should be liberal in carbohydrate, up to 200 grams, 2 grams of protein per kilogram of body weight and 30 calories per kilogram of actual increasing body weight. Salt is restricted after the twenty-fourth week and sodium bicarbonate prohibited. Multiple small doses of insulin are the rule. Early in pregnancy there is a low renal threshold. With almost normal blood sugars, the daily excretion of sugar may amount to 100 grams. This not only represents a great loss of calories but also favors the development of ketosis. Glycosuria is corrected by combined protamine zinc insulin and small doses of crystalline insulin before breakfast, before lunch and before the evening meal.

Hormonal treatment at present consists of intramuscular stilbestrol and intramuscular proluton. The quantity of stilbestrol is regulated by the level of the chorionic gonadotropin. It should be increased to the point where the chorionic gonadotropin remains below the level of 200 rat units per 100 cc. of blood. The progestin therapy is kept at a minimum because of cost. From choice it is increased in an effort to bring the level of pregnanediol excretion to normal according to the standard of Venning and Browne.[11] In spite of massive doses of stilbestrol, nausea and vomiting have not occurred. One fatal chemical hepatitis which may or may not have been due to stilbestrol did occur.

A follow-up of the 108 surviving infants to date shows that two infant deaths occurred. One was due to a giant cephalomeningocele and the other to septicemia. The obesity and the edema have not persisted. There have been no blood dyscrasias. There have been no instances of dwarfism or obliteration of the medullary canal which might have been expected because of the use of large doses of stilbestrol. There have been no genital anomalies in the group. None of the infants has developed diabetes to date.

A follow-up of the mothers showed no increase in the severity of diabetes. At the present time, we appear to have some evidence of a decrease in the severity of the disease in those who received sex hormone therapy. This is a very difficult point to determine accurately because with the added responsibility the diabetic mother tends to take better care of the disease and with stricter adherence to treatment her insulin requirement decreases.

DISCUSSION

In this series of 125 cases a close correlation exists between the incidence of fetal death, the imbalance of sex hormones and maternal morbidity. Fifteen of the seventeen fetal deaths occurred either in relation to prematurity or toxemia and in relation to sex hormonal imbalance. The former was associated with atelectasis and the latter usually with macerated stillbirth.

The reason for the great frequency of the imbalance of the sex hormones in diabetic pregnancies is not clear. It may be one of the manifestations of

the complex endocrinal disease which diabetes is. In certain periods of diabetes we see clinical and chemical evidence of an excess of pituitary activity; in other stages of the disease, clinical and chemical evidence of hypofunctioning of the pituitary. Whether or not this contributes to the pregnancy problem at present we are not able to state. Production, metabolism or excretion of sex hormones may be affected by the disease or its sequelae.

Three possible explanations for the congenital defects occur. First, the mechanism may be on the basis of heredity; second, hormonal imbalance; and, third, vitamin deficiency. Similar lesions have been produced in experimental animals by vitamin B deficiency,[12] and congenital anomalies have been produced by disturbance in the sex hormone regulation.[13] More and more, there has been an intimate relationship between vitamins and hormones. So far as heredity is concerned, we do have evidence of congenital defects among diabetics as well as their offspring.[14]

The weight of the infant, islet hyperplasia, water imbalance, glycogen infiltration of the fetal heart, may possibly be explained on the basis of hyperglycemia which, however, could not account for splanchnomegaly, hematopoiesis, or the positive Aschheim-Zondek reaction observed in the female infants of diabetic mothers.

The size of the infant, water imbalance, hematopoiesis, the Aschheim-Zondek reaction, the glycogen infiltration, and splanchnomegaly could be the direct result of the disturbance of the sex hormones. It is not illogical to believe that both diabetes and sex hormone imbalance play a part in producing the infant which is characteristic of the diabetic mother.

CONCLUSIONS

The total fetal survival for pregnancy complicating diabetes in the past has been significantly less than that of the average child-bearing population. If all trimesters are considered, it has been as low as 50 per cent, and if the third trimester alone is considered, as low as 65 per cent. The infant of the diabetic mother has certain characteristics. These are, first, over-size, which in a series of 125 infants reported here was due to obesity, edema and splanchnomegaly; second, hematopoiesis resembling that found in erythroblastosis; third, hyperplasia of islet tissue, and, fourth, self-correcting hypoglycemia. Abnormal infants behave like premature ones having atelectatic breathing, periods of cyanosis and apnea, instability of temperature regulation and jaundice.

The clinical course of the diabetic mother is often abnormal. In a series of 125 cases 40 per cent had toxemia, and 25 per cent delivered prematurely. This behavior does not appear to be in any way correlated with gross deviations of the diabetic course since only 0.8 per cent of these cases had coma, and only 0.8 per cent had severe hypoglycemia. Coincident, however, with an imbalance of the sex hormones of pregnancy is the abnormal obstetrical maternal course and the high fetal mortality rate. It is suggestive that the mechanism is a progestin-estrin deficient metabolism and that the rise of chorionic gonadotropin and fall of pregnanediol are relatively practical tests which predict an abnormal clinical course for the mother and for the infant. Correction of the hormonal imbalance lowered the incidence of prematurity, modified toxemia, and resulted in a rise of late fetal survival from the uncorrected level of 60 per cent to 92 per cent.

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PREGNANCY AND DIABETES

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Pregnancy is always of interest and particularly is this true when it involves the young diabetic who only 20 years ago was doomed to a meager existence for only a brief span of life and in whom any complication was apt to lead to coma and death. In spite of this fact, pregnancy is such a prevalent condition that even in this group some data were assembled. All of us have heard the saying that babies of diabetic mothers were apt to be unusually large at birth. Furthermore, we knew also that the fetal survival rate was poor and that not infrequently the mother had difficulty which at times caused death. Since insulin was introduced the maternal mortality has improved markedly, and I suspect the same is true of infant mortality, but pre-insulin statistics are too meager for accurate comparison. Now the diabetic child, instead of living only one year, has a reasonably good life expectancy and is maturing, marrying and reproducing. Young women in the childbearing period develop diabetes and carry on as before. Doctors no longer counsel against pregnancy, knowing that the life of the mother is relatively safe. For these reasons more pregnancies occur in this group of patients and more data are being assembled.

Nevertheless, the fetal mortality rate remains high, as White has pointed out, even when the diabetes remains well controlled. At the Joslin Clinic a study of these patients was undertaken. At first an attempt to improve fetal mortality was made by early delivery to avoid the mortality incident to death *in utero* at or near term. Quick delivery by Cesarean section was recommended with some apparent benefit. Nevertheless the fetal survival rate remained low, and need for a new approach was apparent. With the diabetic and nutritional status of the patient satisfactory and the results poor, it seemed that another factor must be at fault. Some endocrine imbalance might be significant. Studies of the hormone concentration of the blood revealed that patients could be divided into two groups. In one group normal values for the concentration of chorionic gonadotropin in the blood was associated with a fetal survival rate of 92 per cent. The other group showed elevation of the hormone, and here the fetal survival rate was only 40 per cent. Stillborns, miscarriages and monsters occurred often.

The next step was in the direction of therapeutics. Massive doses of stilbestrol and progesterone were administered until the gonadotropin fell to normal and remained there. The results were gratifying. Now three groups were represented and the results were consistent. The first group consists of diabetics with normal hormone in whom the fetal survival rate is 92 per cent. The second group has elevated hormone, and the fetal survival rate is 40 per cent. The third group had elevated hormone which was reduced by treatment, and here the survival rate rose again to 90 per cent.

Now these results are excellent and their consistency encourages belief in them. Yet confirmation was not forthcoming, and doubt was many times expressed by eminent men who, however, had made no studies to refute them. In the fall of 1941 I prevailed on Dr. R. J. Main, professor of physiology at the Medical College of Virginia, to make the hormone assays for me. This paper is simply a preliminary report based on the results of the few cases we have tested so far. As you know, pregnant diabetics are not plentiful. Furthermore, during these war times rats are scarce and expensive. Labor is at a premium, and our own time is filled with daily duties that allow little extra for investigation.

The tests are made by collecting blood from the patient, precipitating the hormone, and injecting varying amounts twice daily into immature female rats for 5 days, and then killing the rats and weighing the uterus to determine the amount of serum necessary to enlarge the uterus to a certain weight. So far we have made no attempt to influence the hormonal balance, but have tried merely to determine whether or not it is an index of fetal survival rate. We have tested 9 cases only which I shall list briefly.

Case No. 285.—A 24 year old woman with diabetes of 7 years' duration was seen in the third month of pregnancy. Pregnancy was uneventful and the diabetes remained reasonably well controlled. There was occasional headache and albuminuria in

the 7th and 8th months and considerable edema in the 8th and 9th months, so that labor was precipitated by rupture of the membranes about 3 weeks prematurely. The hormone determination late in the 7th month was normal, and a healthy baby girl weighing 9 pounds was delivered without incident. The patient left the hospital in 9 days.

Case No. 323.—A 21 year old girl with diabetes of 2 years' duration and one divorce and one separation and one attempt at suicide behind her came in during the 2nd month of pregnancy.

The pregnancy was uneventful save for a sudden spell of severe lumbar pain at the end of the 6th month and a failure of the uterus to enlarge properly after this. In view of the lack of uterine enlargement labor was precipitated late in the 8th month by rupture of the membranes. Delivery of a 3 pound girl, who had the development of a full term infant, was done without difficulty, but the baby died in 11 hours in spite of oxygen. Autopsy showed questionable erythroblastosis fetalis. A very large placental infarct was found which may have accounted for the small size of the infant by slow starvation. The hormone assays were normal in the 5th and 7th months, but a placental infarct sufficiently large to reduce markedly the size of the fetus might also reduce the blood value of the placental hormone in question. The patient was in the hospital 7 days.

Case No. 450.—A 29 year old woman with diabetes of one year's duration came in during the 2nd month of pregnancy. Pregnancy the preceding year, when diabetes was found, resulted in a stillbirth at term 4 months prior to the present pregnancy which was uneventful.

The hormone test was normal in the 9th month of pregnancy and she was delivered of a normal boy of 9½ pounds after the spontaneous onset of labor. The hospital stay was 6 days.

Case No. 493.—A 37 year old woman with diabetes of 8 years' duration was seen in the 2nd month of pregnancy. This was the third pregnancy since the onset of diabetes. The two previous resulted in stillbirths of large babies (10 and 14 pounds) at term. Pregnancy was uneventful save that at the time we wished to precipitate labor the cervix seemed too hard. During the next week fetal death occurred and spontaneous labor occurred about two weeks after the expected date with delivery of a macerated fetus weighing 8¾ pounds. The hormone values were normal in the 2nd and 7th months but elevated in the 9th month. Latent syphilis with a doubtful Wassermann was treated for the last 6 weeks of pregnancy in spite of 64 injections of arsenic and bismuth in previous pregnancies. The patient left the hospital in 4 days.

Case No. 505.—A 20 year old girl with diabetes of 15 months' duration was seen in the 8th month of pregnancy with a story of a stillbirth at 7 months in pregnancy the year before. She had diabetic coma three months before the present pregnancy. The hormone was normal two weeks before term and delivery of a normal girl weighing 6 pounds 2¾ ounces was uneventful, the patient leaving the hospital in 9 days.

Case No. 640.—A 37 year old woman with diabetes of 4 years' duration was seen first just 3 weeks before delivery. She had been in coma 4 weeks before this pregnancy. The hormone was normal, and pregnancy resulted in the birth of a normal boy weighing 7 pounds 10½ ounces. The stay in the hospital was only 4 days.

Case No. 668.—A 26 year old woman with diabetes of one year's duration was seen first in the 2nd month of pregnancy. She had been in coma 9 months previously. The hormone values were normal at 4, 6, and 8 months. The pregnancy was smooth and resulted in the birth of a normal girl weighing 8 pounds 15 ounces. The hospital stay was 8 days.

Case No. M.C.V. 26025.—A 45 year old woman with diabetes discovered in this pregnancy was first seen in the 8th month. Pregnancy passed without untoward signs and the gonadotropin was normal. A healthy 7½ pound girl was delivered at term.

Case No. M.C.V. 10510.—A 37 year old woman with diabetes of two years' duration was seen in the 4th month of an uneventful pregnancy. Hormone level was normal at 6 months but an unusually high normal value was noted in the 9th month. Death *in utero* occurred 3 days before spontaneous delivery of a macerated fetus weighing 11 pounds 8 ounces.

Of these 9 cases, 7 had normal hormone values. Of these, 6 have healthy babies and the 7th one lost hers apparently due to a condition unrelated to the diabetes. Of the 2 remaining cases, one had an abnormally high level of choronic gonadotropin

and was delivered of a macerated fetus. In the other case, the hormone level was unusually high, although we hesitate to classify it as abnormal until our normal is better established. This pregnancy also ended in the birth of a macerated fetus. This work, although meager, corroborates the findings at the Joslin Clinic.

Medical Arts Building.

You Can Walk Without Legs.

Teaching by example is the most effective means of restoring the courage and self confidence of the war wounded who have lost a limb in the present conflict, J. P. McEvoy, New York, asserts in *Hygeia, The Health Magazine* for August. Most men who think that they are permanently incapacitated as the result of the loss of an arm or leg find new hope in the fact that others who have suffered a similar disaster have, by the use of an artificial limb and a determination to overcome their handicap, become self reliant and their injury almost unnoticeable.

Explaining the importance of this problem among the war wounded, Mr. McEvoy declares that while "actual figures are a military secret, it is unofficially admitted that two thirds of our war wounded now coming back from the battle zone are 'amputees'. The biggest percentage of these have lost one leg, usually the right one. There are two or three times as many leg casualties as arm, the result mostly of the fiendishly perfected land mines in this conflict.

"It is only natural for a boy who has lost a limb to feel that this is a rare disaster, but there were 4,403 'amputees' from the last war, and even in normal times as many as 10,000 lose arms or legs annually in this country by automobile and railroad accidents and infectious diseases. All told, there are approximately 350,000 legless or armless people in the United States. . . ."

One of the largest of the three hundred artificial limb companies in the United States, which makes a thousand artificial limbs a month, has organized a baseball team of customers who have lost either an arm or a leg and yet play regular benefit games in and around New York, the author continues, pointing out that this year's schedule was somewhat curtailed because so many members are employed in defense industries that they have only a limited time for practice.

"It is not generally known," he states, "but Great Britain's air raid victims who have lost limbs are provided with new artificial ones free of charge by the Ministry of Pensions—and nearly always they go back to the same work they left. In the arm training school at Roehampton, patients get an intensive course in carpentry, printing, sign writing, decorating, gardening. Women are taught to knit and do housework with their artificial arms and are trained for factory work.

"The hand is detachable at the wrist and into the socket can go whatever tool is needed for the job in question. An engineering foreman perfected an artificial right hand with which he can select a cigarette from the package, take a match from a box, strike it and light up. This done, he can take off the hook and punch a 60 pound wooden block with his steel stump. . . ."

Accounts such as this of those who have been able again to take their place in ordinary affairs of life, or better still, actual demonstration by them of their unimpaired ability to work and to play, can do much for the morale of those who have recently suffered amputation, Mr. McEvoy says.

THE TREATMENT OF URETERAL CALCULI*

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Ureteral calculi with few exceptions originate in the kidney, and in many cases pass readily through the ureter. The normal constrictions of the ureter present natural barriers in the passage of stone, and it is at, or near, these areas that stones are usually lodged. Pathological strictures or spasm of the ureter may account for the arrest of calculi in any portion of the ureter. When the stone has been arrested in the ureter for a time, varying from a few hours to several days, the spasm may relax or the ureter may become dilated from above sufficiently to permit the stone to continue down the ureter. This process may be repeated several times before the stone is eventually expelled. When the stone fits very tightly in the ureter or when the spasm persists, the ureteral wall becomes edematous, often completing the occlusion of the channel. The stone is then impacted and rarely moves further unless assisted. If this impaction is not promptly relieved, inflammatory changes take place in the ureteral wall, followed later by fibrosis and often permanent injury to the ureter. Sufficient drainage may occur around the stone to preserve the kidney function. In long standing cases grooves are sometimes noted in the stone. In most cases stones that have existed for several weeks are accompanied by some dilatation of the ureter and kidney pelvis with diminution of the renal function. Not infrequently the kidney is irreparably damaged or destroyed. In our series nephrectomy was required in six patients. Most of the arrested ureteral calculi, about 75 per cent, pass the two upper constrictions and become arrested in the pelvic segment. The ureterovesical area is the narrowest and most resistant portion of the ureter.

The Relief of Pain.—The first consideration in a case of kidney colic is the relief of pain. This is usually accomplished by the administration of narcotic and anti-spasmodic drugs and the application of heat. Morphine is the most dependable drug for the relief of pain and an adequate dose should be given. An adult should be given from ¼ to ½ grain. Antispasmodic drugs such as atropine, calcium gluconate and depropanex are very helpful in relaxing the smooth muscle of the ureter. When given with morphine the effect of the narcotic is greatly prolonged. The best method of applying heat is to immerse the patient in a tub of water as hot as it can be tolerated. If this is not practicable, hot water bottles or heating pads to the loin and abdomen are very helpful. If the stone passes or changes position the attack will subside. If the obstruction persists further medication is necessary within a few hours. Occasionally pain is almost continuous until the obstruction is relieved by operation or by passing a catheter beyond the stone. If the patient has no fever and the pain can be controlled it is safe to wait a few days with the hope that the stone will pass. If the stone is not recovered after three or four days, or if acute tenderness develops in the costavertebral area a cystoscopic and x-ray study is advisable. The onset of fever requires immediate cystoscopic intervention to prevent irreparable damage to the kidney. If the patient recovers from the attack and has not passed a stone, a urologic examination should be made. Occasionally a stone becomes quiescent in the ureter and gradual dilatation and destruction of the kidney progresses with little or no discomfort.

Methods of Removing the Stone.—It is possible now to remove many ureteral calculi by cystoscopic procedures. This is accomplished most frequently by dislodging the stone and dilating the ureter with catheters and bougies aided by lubrication and the administration of relaxing drugs. Frequently two or more catheters may be passed by the stone and left in place a few hours for drainage of the kidney and relaxation of the ureter. When they are removed, the stone often comes away with them or is passed shortly thereafter. Many special instruments have been devised to aid in the removal of stones, some to aid in increasing the caliber of the ureter, and others to grasp or entangle the stone and extract it from the ureter. The usefulness of these instruments is limited. They are usually semi-rigid, hence their introduction into the ureter is not without danger. Reports of ruptured ureters have increased

*From Urological Service—Hospital Division of Medical College of Virginia.

since their introduction. The ureter in one of our patients was ruptured. Recovery followed incision and drainage. A few are helpful accessories in the hands of skilled cystoscopists. A sizeable proportion of ureteral calculi, approximately twenty per cent according to some writers and decidedly more in the opinion of others, should be removed by ureterolithotomy. The choice of procedure depends upon many factors, varying from the size and location of the stone to the temperament of the patient. In our series of 238 patients 81 stones were removed by ureterotomy, the others passed spontaneously or were removed by cystoscopic methods. In many instances the patient was from a distance and the difficulty of repeated visits to the hospital for dilatation was a deciding factor in determining the procedure to be used.

Size and Location.—Some authors attempt to designate the upper limit in size at which a stone may be removed by cystoscopic procedures, some stating that a stone larger than a centimeter in its greatest dimension should be removed by ureterolithotomy, while others feel that attempts should be made to remove stones twice as large by cystoscopic manipulation. So many other factors enter into the problem that such a standard is of little value. A small spastic ureter, a dense unyielding condition of the intramural segment, inflammatory reaction around the stone, and distortion of the base of the bladder are occasional handicaps that are difficult to overcome. In such cases, it is often to the patient's advantage to remove the stone by open operation. The location of the stone when first seen is of considerable importance in deciding upon the method of treatment. We agree with Foley that any stone larger than five millimeters in diameter impacted above the point at which the ureter crosses the iliac vessels should be removed by ureterolithotomy without delay. In such case the stone has yet to traverse the narrowest portion of the ureter, and if it becomes impacted near the bladder it is more difficult to expose by open operation. On the other hand, removal of a stone from the upper portion of the ureter is one of the easiest and safest urological operations. Operation in this area becomes imperative if there is evidence of infection or if the stone is not readily passed by an ureteral catheter.

The Duration of Symptoms.—The duration of symptoms is also important. If the history and examination indicate that the stone has remained in the ureter for a long time, cystoscopic methods are less apt to be successful. The segment of ureter surrounding the stone is often thickened and inelastic, and in some cases spicules of stone are imbedded in the ureteral wall. It is correctly stated that many stones of long residence in the ureter contain grooves which permit drainage and protect the kidney. It is equally true that stones lying silently in the ureter may cause complete destruction of the kidney. If there is evidence of urinary stasis or diminution of kidney function, prompt removal of the stone is the safest procedure. We found in our patients that the degree of kidney impairment was directly proportional to the duration of symptoms and the most rapid and satisfactory recoveries were obtained in those whose symptoms were of short duration.

Infection.—Mild degrees of infection may be controlled by one or more indwelling ureteral catheters while efforts are made to extract a stone, but if the infection is severe, with high fever or chills and fever, immediate operation is necessary. If the stone is accompanied by severe infection with rapid pulse rate, abdominal distention and acute lumbar tenderness, nephrostomy or nephrectomy may be the operation of choice. In such cases it should be remembered that a severely infected kidney will recover if adequate drainage is instituted. In some cases a small stone will pass unaided while nephrostomy drainage is in progress; if not, it can be removed later under more favorable conditions.

Anuria.—Anuria occurs in bilateral ureteral calculi, when the only kidney is blocked, and when the uninvolved kidney ceases to function because of obstruction of the opposite ureter. This last condition is spoken of as reflex anuria and is probably caused by the entire burden of excretion being thrown suddenly on a kidney whose functional capacity is insufficient for the task. It is doubtful if reflex anuria ever occurs when the uninvolved kidney is entirely normal. Treatment in these cases is influenced to some extent by the length of the time the anuria has existed. If the stone is small and recently impacted, excretion of urine may be re-established by the passage of one or more catheters by the stone. If, after the catheters are removed, the stone is not passed within a few days, or if there is evidence of infection or a recurrence of anuria, ureterolithotomy should be done immediately. If the stone is of sufficient size to make its expulsion from the ureter doubtful, or if the anuria is accompanied by fever,

immediate operation is the safest procedure. In cases of prolonged anuria with evidence of uremia or sepsis, nephrostomy should be done for drainage and protection of the kidney. The stone, unless it can be reached through the kidney incision, may be removed when conditions are more favorable. Bilateral ureteral calculi are always a serious problem. If possible ureteral catheters should be passed beyond the stones and left in place for drainage. The stones may then be removed at separate operations a few days apart, or one stone if small may be removed by cystoscopic methods following operation on the opposite side. The operative risk is greatly increased in bilateral operations. They should be avoided unless infection or anuria require immediate drainage of both kidneys.

Sex.—Cystoscopic procedures are better tolerated by women, and consequently probably a greater percentage of stones in females can be removed by this method than in the male. The cystoscope can be passed readily by the side of indwelling ureteral catheters, making it possible to pass a greater number of catheters by a stone in the female ureter. Stones impacted in the lower end of the ureter may be removed through a vaginal incision. When the stone can be palpated through the vagina, this is the best means of approach. The operation is exceedingly simple and safe. The fear of ureterovaginal fistula is in my experience unfounded.

Age.—Fortunately ureteral stones are not seen very often in children and elderly people. In children the various instruments devised for the extraction of stones are not applicable because of their size. Often small stones will pass following dilatation of the ureter with one or two small catheters. Elderly people do not tolerate repeated instrumental efforts to dislodge ureteral calculi. Only small stones that give promise of easy passage should be treated by this method. Frequently enlargement of the prostate will prevent cystoscopic efforts at removal. Such patients should be carefully studied and the gentlest method possible should be used.

The Patient's Attitude.—The patient's attitude toward the treatment must be considered also. Some patients are very fearful of surgical procedures and will tolerate any number of cystoscopic efforts rather than submit to operation. There are others who are very intolerant to pain and react to cystoscopic manipulation very badly. If it is necessary to subject a patient to general or spinal anesthesia several times within a few weeks to manipulate a stone, it is far better that operation be done in the beginning. Economic factors also enter into the choice of procedures, especially with patients who have come some distance for treatment. When it seems probable that several cystoscopic treatments will be necessary to remove the stone, an operation will cause less discomfort and an earlier recovery.

CASE REPORTS

During the decade ending January 1, 1941, there were 238 patients admitted to the Hospital Division of the Medical College of Virginia with symptoms that indicated ureteral calculi. Of this group ureteral calculi were demonstrated in 227. In some of the remaining eleven there was cystoscopic evidence that a stone had recently passed. A stone was recovered in 196 instances and 29 patients did not return to the hospital following the initial cystoscopic examination.

In this series of patients the stone was found twice as often on the right side as on the left. One hundred and fifty-three of the patients were male and 85 were female. Fifty of the patients were colored (Table 1).

CASES

PLATE 1

	Total	Male	Female	Colored	White
1940	33	24	9	5	28
1939	40	25	15	12	28
1938	30	20	10	7	23
1937	25	11	14	3	22
1936	24	14	10	6	18
1935	23	17	6	6	17
1934	18	9	9	5	13
1933	13	7	6	3	10
1932	15	13	2	2	13
1931	17	13	4	1	16
Total	238	153	85	50	188

Thirty-nine (39) patients had hydronephrosis on the side of the obstruction and 39 also had demonstrable stones in both kidneys. Of this group with complicating kidney pathology nephrectomy was necessary in six. In the group of 196 from whom the stone was recovered, 52 passed the stone spontaneously or following cystoscopic examination, and the stone was recovered by additional cystoscopic manipulations in 54. In nine instances the stone was pushed into the kidney pelvic and removed by pyelotomy. A ureterotomy was done in 81 cases. In the majority of these immediate removal of the stone

was considered necessary because of infection.

A majority of the patients were between 20 and 40 years of age, the youngest being ten and the oldest 69 (Table 2). Pain was the predominating

PLATE 2

Age group	No. of cases
10-20	7
20-30	76
30-40	58
40-50	47
50-60	24
60-70	16

symptom in 211, 62 complained of hematuria, 49 stated that they had had chills, and 38 complained of having had fever.

Seven patients died in the hospital; two from uremia, four from pneumonia and one from pulmonary embolus. The following brief histories of these patients indicate that death was caused in most cases by delay in receiving surgical treatment.

Case No. 1: W.B., a white male, age 65, was admitted to the hospital in January, 1939, because of a history of pain in the right side of two months' duration. He had had a transurethral resection in 1937, and in 1938 he entered the hospital with bilateral renal stones, and one in the right ureter which was removed. On his last admission he was found to have three stones in his left kidney, one of which partly obstructed the uretero-pelvic junction. His NPN, which was 75 milligrams per 100 c.c of blood on admission, fell to 30 milligrams about a week later and a left pyelotomy was done and the stones were removed. His renal function had never been more than 50 per cent of normal. On his eighth post-operative day he had a chill, developed broncho-pneumonia and died two days later.

Case No. 2: H.C., a colored male, age 20, was first seen in 1935 because of a ruptured bladder, the result of a fractured pelvis. A suprapubic cystotomy was done at that time. The patient recovered from this accident and the suprapubic wound healed within three months. Following discharge from the hospital he did routine farm work, but suffered occasionally from severe renal colic, mostly on the left side. He returned in 1936 in an acute attack of renal colic and was found to have bilateral ureteral calculi, complicated by a bilateral pyelonephritis. His phenosulphothalein elimination was 7 per cent in two hours and his nonprotein nitrogen was 236 milligrams per 100 c.c. of blood. A right ureterotomy was done and a stone removed and a month later a left ureterotomy was done. The patient never regained consciousness after the second operation, but hung on in uremic coma for 36 hours and died. Autopsy showed bilateral pyelonephritis and pulmonary edema.

Case No. 3: C.H., a white male, age 57, was admitted to the hospital in 1936 with a four-year history of lumbar pain, hematuria, frequency of urination and passage of gravel. On admission his phenosulphothalein elimination was less than 25 per cent in two hours, and his nonprotein nitrogen was 40 milligrams per 100 c.c. of blood. He was found to have bilateral renal and ureteral calculi and a large stone in the bladder. The stone from the upper right ureter was removed after a cystoscopic examination revealed its location and a perinephritic abscess was drained. Some time later the stone was removed from his bladder because of constant pain and tenesmus. A week following this last operation he developed pneumonia and died.

Case No. 4: J.C., a white male, age 65, came to the hospital in 1935 with a calculus in the right ureter, complicated by pyonephrosis of the right kidney and bilateral renal calculi. A cystoscopic examination was done and a catheter was passed beyond the obstruction in the right ureter and left in place for drainage. The patient was found to be in mild cardiac failure, and after proper digitalization, a ureterotomy was done and the stone removed. His dye elimination was 17 per cent in two hours and his NPN was 42 milligrams on admission. Following operation his NPN rose to 72 milligrams, he developed acute pyelonephritis and died in uremia on his sixth post-operative day.

Case No. 5: J.S., a white male, age 42, gave a history of having had a bladder stone removed in 1930, and a left nephrectomy in 1934 because of a non-functioning infected kidney. The record showed this kidney to have marked lipomatosis and dilatation of the renal pelvis and ureter. In 1935 he returned to the hospital complaining of pain in the right flank. His renal function was normal. A stone was found in the right ureter and several small stones in the renal pelvis. The stone was removed from the ureter. During his post-operative course he developed cystitis, pyelonephritis, and finally pneumonia and died. Autopsy revealed a dif-

fuse bronchopneumonia, renal calculi, pyelonephritis, and a perinephritic abscess.

Case No. 6: R.G., a white male, age 57, was admitted to the hospital because of acute pain in the right flank, pyuria and hematuria. His kidney function tests were within normal limits. An x-ray examination revealed a right ureteral stone, and a cystoscopic examination was done. A retrograde pyelogram revealed the stone to be located now in the kidney parenchyma. No further operative procedures were contemplated at this time. The patient complained of vague right upper abdominal pain which was suspected to be gall-bladder disease. About 48 hours after the cystoscopic examination the patient suddenly went into shock and died within 20 minutes. A pulmonary embolus was found at autopsy. There was also a stone in the right kidney pelvis, hydronephrosis, hydroureter and an aneurysm of the right renal artery.

Case No. 7: J.D., age 51, a white male, was admitted to the hospital in 1933 with a high fever and acute pain in the right flank. A cystoscopic examination was done and a stone found in the right ureter. This was removed by ureterotomy immediately because of the high fever. There was no improvement in the patient's condition and the fever remained high. Two days later the patient died of a bronchopneumonia, which had been diagnosed the day of the operation. A renal function test on admission showed only 15 per cent of the dye eliminated.

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Medical Arts Building.

The Association of Military Surgeons of the United States

Will meet in the Bellevue-Stratford Hotel, Philadelphia, for a three-day session on October 21.

The symposium on war medicine will be of vital and direct interest to the health and welfare of the men in the armed forces, to physicians, research specialists and scientists everywhere, as well as to the general public. It is expected that the meeting will bring together 2,000 doctors, many of whom have been in active combat with the servicemen in every camp and base throughout the country and on all the fighting fronts.

Medicine's methods of meeting the new and complicating factors brought on by mechanized modern warfare will also highlight the sessions. There will be reports and discussions on such new matters as air evacuation, parachute injuries, the physiological aspects of high altitude flying and dive bombing, tropical medicine, blast injuries, amphibious operations, submarine warfare, immersion and temperature extremes, neurosurgical problems and the whole field of rehabilitation. The first night will be known as "Army Night" and the second as "Navy Night".

The convention, with its score of exhibits and meetings, will occupy all available floor space in the hotel. The program will list, besides general sessions, a series of forum lectures and teaching panels, as well as a great number of film showings.

THE PROBLEM OF THE CIVILIAN MALADJUSTED*

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The causes for war are many and diverse; yet, there are a few that must be considered when any attempt is made to treat community problems that arise during wartimes, or subsequent to peace. Man has killed man since the beginning of time—thus there is no novelty to this situation. Tribe has fought Tribe and Nation Nation since these units of popular organization have been in existence. The Home Front has always been there, so that the reactions which those who stay at home must follow are as fixed in pattern as is the traditional behavior of the warrior. What has happened in the past will happen now. Therefore, it is possible to predict wartime effects as well as post-war behavior. Civilization has changed; global war is new; aerial war has brought a new strain to the stay-at-home. Yet, to treat wisely what is happening and to prevent some of the evils bound to come, it is necessary to investigate a few of the fundamental reactions behind war, as well as those which follow in its wake.

The fundamental of greatest importance is that war is a disease of Nations very similar to mental disease of the individual. It is a psychosis of Nations, a personality disorder involving the total reaction of the State. The Nation as a unit or, if you wish, a personality is sick, so that the people who are the minutia who compose that total structure have a personality disorder also. It is folly, therefore, to expect normal behavior during wartimes or during the immediate convalescence.

Another axiom is that war is practically always a flight from reality. When the problems of life get too tough or it seems that the Gods grind too slowly, man flies to war to escape the world old struggle of progressing civilization. He is like the alcoholic who escapes reality by a drug. Man goes on a spree and by the process of rationalization becomes drunk on his trumped up glory. Nothing is solved by war. Everyone loses, no one gains. Yet, for a time there is surcease from the steady grind of lasting progress. Therefore, our hopes for social benefit from this struggle are as vain as those of the drunkard's wife who brings her husband home from the gutter tattered and torn, battered and broken, with all the family savings gone to pay for the short period of exuberance.

With any mental illness there are always regressive tendencies. War itself is a great atavism; it is an archaic, outmoded type of human behavior accompanied by the most primitive reactions. The joy of killing, which was the chief joy of primitive tribes, has been inhibited for ages, while it is only in childhood's fantastic play that the slaughter of man by man is untrammeled by legalistic rationalizations. Nations do murder to Nations in our times, but no civilized Nation would admit that the call for human blood was a factor in the struggle. As wars continue, however, there is more and more regression. Brutality, beastiality and cannabalistic tendencies become more marked and more widespread. Therefore, in community living such trends will appear. The rules by which man can best live in close communion with his fellows, rules that have taken centuries to conceive and to have accepted as just and fair, will become ineffectual, will lose place and be forgotten. Altruism, justice, love and consideration for your neighbor, right living, and self-restraint out of consideration for others, are among a few of these rules that will be broken.

Yet, on the other hand, during the time of war something of value usually does appear. These gains of progress are the unexpected happenings, slipped in, as it were, while the Gods of Things as they are are engrossed in their traditional folly. During the French Revolution psychiatric patients were freed from restraint; during the last war psychiatry escaped from the institution into the community; during the War Between the States the colored man was freed from slavery; during the present war he is working for a place of dignity (it remains to be seen whether he will be worthy of it). Undoubtedly a new status for the women of America will be a by-product of this war. There will be others whose future worth cannot now be realized. We can be sure, however, that the high ideals publicized as war aims will fade with the peace and disappear with the convalescence.

In summary, communities as well as individu-

*Read before the Mental Hygiene Section of the Virginia Conference for Social Work, Roanoke, April 23, 1943.

als cannot be normal in wartimes, so it is now needless to apply the plans for usual living. New plans are necessary. Next, progress in Mental Hygiene such as this Society embraces is a step toward a better civilization, while war is a flight from the inhibiting bounds of right living, so that there is hope for nothing or very little until man is sober again. Then, thirdly, regressive trends in human behavior will become widespread, infiltrating the community more and more as war continues. Last, there is hope in the by-products of war. Perhaps if we plan we can determine what they shall be, so that there shall be no repetition of such mistakes as the Eighteenth Amendment. Finally, let us hasten to spread the Gospel that war is a disease, that the world is sick, and that it is folly to hope for anything more from it than a quick recovery.

These are among the fundamental effects that are common to all wars. It is certainly safe to say that they will be in force in our community during the next five or six years, so it behooves us to apply them to the individuals we live with to see if we can predict what will happen and to consider what we can do about it.

The father principle of security and the mother principle of an all-abiding love are the basic needs of the child. Provided the child is not grossly handicapped by inheritance or disease, if these two elements are given, the resilience of childhood will enable the child to weather any storm. Broken homes are the menace; broken by industry, broken by war, broken by sudden wealth, or broken by discord within the family circle. We can expect a greater breakdown in the family group, so substitutes must be found. The school must take over the duties of the home; the Church and the Department of Recreation must be more interested in the child; The Department of Public Welfare must have more and better boarding homes; communities must be aroused to meet the call of the homeless child.

The adolescent in time of war is in the center of the social whirlpool. As war continues and the community mores weaken, juvenile delinquency descends the age scale until it reaches its peak in the twelve or fourteen age group. Adolescence is the period of sex adjustment, as well as the time for the final separation from the home. But in war this change comes with a rush, overwhelming the pubescent child. There is only one way to attack this regressive tendency, the way of knowledge and truth. The school and the home must start sex education early, with frankness and honesty. Hygiene courses for the ten year olds which present the facts of life should be emphasized. The sacredness of parenthood and the responsibility for inheritance must be emphasized before the tremendous hormonic urges of the "teen age" upset individual behavior in an upset world.

Responsibilities formerly reserved to adults must be dropped down the scale. Child labor, properly supervised, is better than crime. Regression must be met by greater knowledge and younger weaning, if we are to escape its dire effects.

The new probation and parole law is taking care of the adult criminal who is discharged from the penitentiary, but it has nothing to do with juveniles. A probation officer connected with each juvenile court throughout the state will be a necessity during the next few years. Also, in each grammar school as well as high school a truant officer or visiting teacher to study the personality needs of the student at school and in the home would help tremendously in the times to come. If such an individual is not supplied the school and the community cannot be expected to meet their adolescent problems successfully.

The Age of Chivalry is from eighteen to twenty-five. Youth goes forth with a shining armor to fight the wars of the world, fostered on him by old men who, in turn, are driven by their waning strength into a lust for power. But youth pays the penalty; our youth are going and will continue to go. The community is left to women, the old men, and those who for one reason or another are unfit for war. The women and the old men must tighten up their belts as never before to keep the home fires burning so bright that the young man, rejected even on the home front, can still satisfy his need for high adventure.

The problem of the "4 F's" hinges on the spirit of the home front. There is work for everyone. The mentally sick, be he a mild psychoneurotic or prepsychotic who returns, must be diagnosed rapidly and as rapidly put to work. The admissions to Mental Hospitals in England have fallen in number. The clinic calls are less because all men have a simple purpose in living, working for the security of all. The rejection of the potential neuropsychi-

atric casualty is the greatest thing that has happened in this war and is the greatest challenge to Mental Hygiene. This Society should formulate a program to take advantage of this opportunity. Little more is known of tuberculosis than was known twenty years ago, yet anti-tuberculosis drives are successful. The knowledge concerning cancer cures has advanced very little in the same period, but cancer programs are popular. Much more is known regarding the prevention and cure of mental disorders than was known twenty years ago; yet Mental Hygiene falters and stumbles along, pushed into the outer darkness by human neglect.

With the peace many of the problems of the late depression period will return. Unemployment will raise its ugly head, since there is yet no solution to the over-supply of labor in a machine age. The unfit man who now holds a job far beyond his deserts will be again on relief when the armies of the world are disbanded. It will be too late then to prevent this post-war debacle. The condition which produced Fascism and gave the State powers over the rights of man that have threatened the life of our own Republic will return again unless something can be done.

Now is the time to get hold of the neglected child in the marginal family, or in broken home to prevent his becoming a candidate for future dole. Now is the time to strengthen our educational program so that from being one of the most illiterate of States, Virginia can bring education to all, an education which not only teaches reading but prepares for life. Now is the time for a positive Mental Hygiene program set to prevent the disasters that the future holds.

In a world out of joint, as man turns away from progress back toward outmoded orgy of decay, let us try to make a positive program for Mental Health, one of the hopeful by-products of the upheaval. The Selective Service has given us much data to work with. There is the experience of other wars and of other Nations at war. Surely there can be some practical plan.

There should be more and more boarding homes, more probation and truant officers in every community, sex education and a strengthening of morals for the child at puberty. A check should be made on our neuropsychiatric rejects with immediate occupation as the main form of therapy; also a cleaning up of our source of inapts by attacking the marginal family and by solving the problem of illiteracy. These few steps can certainly be considered as wartime emergencies. Finally, by spreading forth the doctrine that while liberty and freedom are our inheritance they must be earned both now and after the war. A Country whose people as individuals are not worthy of liberty shall certainly have liberty taken away.

The Modern Attack on T. B.

In spite of the steady improvement in diagnostic techniques and facilities during the past twenty years, little substantial progress has been made in finding cases of early tuberculosis. The reasons for this failure are too well known to call for discussion here. Briefly they can be reduced to two facts: early tuberculosis rarely gives rise to symptoms, and apparently well people seldom consult a doctor. (Henry D. Chadwick, M.D., and Alton S. Pope, M.D.)

THE TREATMENT OF ECLAMPSIA WITH VERATRUM VIRIDE

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In bringing this subject to you it is my object to review very briefly the development of rational methods of treatment as they have appeared and to report a few cases. It seems to me that real improvement has recently been made in the management of this most serious complication of pregnancy and the renewed interest in veratrum viride may help to lessen the impressive mortality of this disease. Even today, however, we find toxemia of pregnancy as one of the most frequent causes of maternal death. In ancient times it appeared that few attempts were made to differentiate or classify the various conditions which might produce convulsive attacks. The treatment was the same in all cases without any concern as to sex, age, history or other factors which might appear to us of vital import. As time passed it gradually was noticed by some that pregnancy seemed to render the convulsions more serious and it was later noted that the gravid state was often the cause of this condition. Only about the beginning of the 19th century, however, was eclampsia considered as a separate disease.

During the middle ages the convulsions were treated by bleeding, purging, blistering, etc. It was thought that the condition was due to "something wrong in the head", and consequently most therapeutic remedies were directed as near as possible to this part. Also, it was thought that since the convulsions were associated with pregnancy, the cure would depend upon rapid termination of pregnancy. Such a view, indeed, has survived until a very recent time. Many and varied have been the means employed in the treatment of convulsive toxemias, including manual dilatation of the cervix, internal versions and extractions, lumbar puncture, decapsulation of the kidney, etc. Among the drugs employed, opium and its derivatives have occupied an important place; however, chloral, paraldehyde, the barbiturates, chloroform, and practically all sedatives have been used. In addition to these magnesium sulphate and veratrum viride appear to have real value. Baker, of Eufaula, Ala., first used veratrum viride in a case of post-partum eclampsia in 1859. Twelve years later a series of ten cases treated with veratrum viride was reported by Fearn. Following this several reports appeared and in 1905 Kirkley stated before the American Gynecological Society that veratrum viride was almost as good as venesection. It will thus be seen that this drug is not a new one but was used for many years with fairly good results. Just why it was abandoned is hard to understand unless it be that the advocates of accouchement force were able to take the center of the stage at about this time. Needless to say, all procedures which aimed at immediate rapid delivery have since been shown to be ill-advised and are seldom practiced today by well trained men.

The conservative ideas of treatment have gradually resolved themselves into two large groups. The first of these may be called the Strognoff, and consists, in its present modified form, of the administration of morphine hypodermically and chloral by rectum. Great stress is laid upon removing all sources of irritation such as light, noise, etc. Inhalations of chloroform may be given, and magnesium sulphate by vein is prescribed. The second method, which may be called the Rotunda, relies mainly upon purgation, gastric lavage, and starvation, the belief being held that the absorption of food was largely responsible for the convulsions. Many combinations and modifications have developed from these underlying principles. The radical ideas have been largely replaced by these more conservative practices, and at the same time improvements in operative technique and anesthesia have contributed to a general lowering of the mortality of this condition. Many reports have been published from time to time, and among these I will mention the very excellent series of Dr. M. P. Rucker—143 cases with a maternal mortality of 4.16 per cent. In securing this result certain principles have been laid down and are, I believe, the real basis for the successful handling of the eclamptic patient: 1. Stop the convulsions. 2. Good nursing, quiet, and rest. 3. Water and possibly intravenous solutions. 4. Digitalis. I have followed these precepts for years and am in entire accord with these ideas. Briefly the convulsions are controlled by the use of magnesium sulphate given intravenously and possibly sodium amytal may be necessary. The nursing care protects the patient against injury and external stimuli and, since rest is considered of prime importance,

gastric lavage, colonic irrigations, purging, etc., are omitted. Water is given by mouth or nasal tube in preference to intravenous injections, as this is easier and safer. The use of digitalis is apparently most valuable in preventing pulmonary edema and, while some of our cardiologists question its administration, I am personally in favor of giving it. It has certainly been more than justified by clinical experience.

In October, 1940, Bryant and Fleming published a paper in which they reported 120 cases of eclampsia with only two maternal deaths, and neither of these was due to the toxemia. Bryant had previously reported a series in 1935 using veratrum viride but this new report reveals that he now relies much more on it than formerly. He believes that many if not all of the phenomena which cause the clinical picture of eclampsia are consequences of abnormal vaso-constriction. Naturally the ideal treatment would be to treat or eliminate the causative toxin. So far, however, this "toxin" is neither known nor has it ever been isolated. Their treatment is essentially conservative. The blood pressure and pulse are controlled by veratrum viride and magnesium sulphate is given by muscle. Twenty per cent glucose is given intravenously every six hours until consciousness returns. No sedatives are given unless there is extreme restlessness or the patient is in labor. Later, a salt free diet is used. Nothing is done about induction of labor until the toxemia is thoroughly controlled. To quote from Bryant's paper, he believes that "Abnormal vaso-constriction is a fundamental pathologico-physiologic phenomenon in eclampsia and that the elevated blood pressure is a simple fact with the action of veratrum viride easily explainable. The theory is that the products of conception produce, or cause to be produced, some kind of "toxin" which is a powerful vaso-constrictor. Further, increasing vaso-constriction causes progressive damage and hypertension with increasing anoxemia, retention of waste products, edema, and even necrosis.

If this premise is allowed, the action of veratrum viride is obvious and desirable. Being a vaso-dilator, it relieves the constricted arteriolar bed, allowing an improved and abundant blood supply to become at once available. A blood pressure drop follows quickly, but the primal value of the drug is to produce general vaso-dilatation and consequent improvement in arterial circulation throughout the entire body.

In January, 1943, Smith *et al* of the Boston Lying-In Hospital published a paper on the "Effect of Veratrum Viride upon the Urinary Estrogens in Pre-eclampsia." This paper is mentioned to bring out the fact that these workers in Boston have also found the action of the drug to be most dramatic. They encountered the marked slowing of the heart and rapid decline of blood pressure, but in addition there is a change occurring in the relationship of the various estrogenic substances in the circulation. They conclude that in pre-eclamptic and eclamptic states a marked change in the estradiol, estrone, and estriol balance is found, but when veratrum viride is given the improved vaso-dilatation causes a sharp increase in the metabolic conversion of the estrogens. Of course, this hormonal change is as transient as are the other effects of veratrum viride.

Since reading Drs. Bryant and Fleming's article I have had four cases of eclampsia and in these have endeavored to follow out their treatment. In one of these the referring doctor, the interne, and I are sure that veratrum viride was given but no record of its administration appears on the chart. The rest of their treatment was followed and is recorded. Dr. M. P. Rucker has also had two cases in which he used veratrum viride and allows me to present these with my own. There were no maternal deaths, but one baby died after a difficult delivery due to a constriction band.

Time does not permit detailed recounting of the six cases, but I would like to outline the treatment in my last case: *Case 6*. Mrs. J. H. was seen by me in consultation with her family physisian at 3:50 A. M. on February 11, 1943. It appeared that this patient, a white primipara, 26 years old, had entered the hospital the preceding morning because of pre-eclamptic toxemia and was five days post mature. Her blood pressure is recorded at 200/124. Labor had been induced by another physician at 2:45 P. M. on February 10, 1943, by rupture of the membranes and labor had started soon after. The patient had been given 1 oz. of castor oil, 7½ grains of sodium amytal, and two injections of hyoscine. At 10:25 P. M. 10 cc. of magnesium sulphate, 25 per cent soloution, had been given intravenously because of the continued hypertension. At 3:15 A. M. the patient had had a hard

convulsion and 10 cc. more of magnesium sulphate solution had been given. When I first saw the patient a few moments later, she was extremely restless, twitching, and apparently was on the verge of another seizure. Her blood pressure was then approximately 190/120 and the pulse 120. Veratrone, min. 10, was given intramuscularly at 4 A. M. and was followed ten minutes later by 5 min. more. A few moments later the blood pressure had fallen to 140/110 and the baby was delivered with low forceps under light gas oxygen anesthesia combined with local. Immediately following delivery it was found that the blood pressure had fallen to 90/48 and the pulse was recorded at 60. From this time on the patient's course was entirely uneventful. Veratrone was given whenever the blood pressure seemed to be rising unduly and intra-muscular injections of 5 cc. of magnesium sulphate, 50 per cent solution, were given eight times. In addition to this, her medication consisted of small doses of phenobarbital, a few tablets of ergotrate, five doses of stilbestrol, mg. 1, for engorgement of the breasts, and occasional analgesics for various discomforts. In all, a total of 45 min. of veratrone were given. It is felt that this patient undoubtedly had eclampsia, exhibiting a typical convulsive seizure, marked albuminuria, and severe hypertension, with coma following the single convulsion. Her progress in the hospital was unmarred by any untoward incident following delivery and she was discharged with her baby 9 days after delivery in good condition.

In conclusion, it may be stated that this case is typical of my experience in the few cases in which I have used this drug. I wish, therefore, to endorse the report of Drs. Bryant and Fleming, and desire from this small experience to recommend veratrum viride as a most valuable drug in the treatment of eclampsia.

NOTE. Since this paper was put in type, the author has had one additional case of eclampsia which was successfully treated by the above method.

Professional Building.

Floral Eponym (7)

MARSHALLIA TRINERVA—SCHREBER

MOSES MARSHALL (1758-1813) was what Lord Moyniham called a medical truant, for while he studied medicine for two years under Dr. Nicholas Way of Wilmington and attended a course of lectures by William Shippen and Benjamin Rush and attended the wounded in the Battle of Brandywine, his true vocation was botanizing. His vocation took him through the Alleghany mountains of Pennsylvania and West Virginia and through South Carolina and Georgia.

Many authorities state that the *Marshallia* is named for Mr. Humphrey Marshall who was a better known botanist, but Dr. Kelley unearthed some letters written in 1792 that settled the question. Muhlenberg, the correspondent, was a leading Philadelphia botanist. The letter from Muhlenberg to Dr. Moses Marshall reads as follows: "Dear Sir, I beg leave to inform you that the new edition of the *Genera Linnaei* is safely arrived. I am happy to see that the editor, my friend, Dr. Schreber, has done what I requested of him. He has given your name to a hitherto undescribed plant that belongs to the *Syngenesia* which he names the *Marshallia*. Give my best respects to your uncle, Mr. Humphrey Marshall, and believe me with great esteem, sir,

"Your humble servant,

Henry Muhlenberg."

HOOK WORM DISEASE*

THOMAS RUSSELL LITTLEJOHN, M.D.,
Sumter, South Carolina.

A subject which is, perhaps, usually considered too trite for consideration is that of hook worm disease, especially in connection with obscure symptoms or those patients who do not respond to treatment for original diagnosis.

These cases of hook worm would probably not have been discovered had it not been for making some simple routine laboratory examination.

In looking over my records of the last hundred cases that I have examined, I find there are twenty-one patients who had had a major operation that seemed unjustifiable. There were twelve other cases that had been advised to have a laparotomy for peptic ulcer or appendicitis.

Case 1.—A married woman, 32 years of age, a multipara. Complaint: pregnancy, weakness, pain in epigastrium and nervousness. She had had some pain in her epigastrium prior to this pregnancy. Physical examination showed her to be five months pregnant, mucous membranes of her mouth were pale, hypotension; other physical examination was negative. She had been examined at a well known clinic and the diagnosis was pregnancy, malnutrition and secondary anemia. Laboratory findings: Red blood cells 3,000,000, hemoglobin 70 per cent, 4 per cent eosinophiles; gastric analysis—anacidity. As this woman had lived in a tropical country for several years, I suspected hook worm disease. Stools were positive for hook worm ova.

Case 2.—A boy, fourteen years of age. Complaint: Diabetes of three years' standing, and his mother said she could not "fill him up". This child was fairly well developed, poorly nourished. He seemed to be alert mentally, but his mother said that he had lost a good deal of time from school, because he felt weak most of the time, and was only in the seventh grade. He had been treated in two well-known clinics with a diagnosis of diabetes mellitus only. The laboratory findings were 3.3 per cent sugar, eosinophiles 12 per cent, hemoglobin 65 per cent, red blood cells 2,700,000. As this child was born and reared in a county in the lower part of the state, I suspected hook worm disease too. Stools positive for hook worm ova.

Case 3.—White married man, age 28, railroad fireman. One night he came in from his run, complaining of severe pains in his epigastrium and cold sweats. He attributed this to four sandwiches and two coca-colas that he had about two hours before. He was in a moderate amount of shock, and was given ¼ grain of morphine and 1/100 grain of hyoscine. The next day he was improved and had practically no pains in his epigastrium. On examination there was no tenderness on pressure; abdomen was otherwise negative. At this time he told me he had had attacks of gas on stomach, pains in epigastrium for several years, but never vomited, and he had passed no blood in his stools. Blood: Hgb. 73 per cent, red blood cells 3,600,000, white cells 11,200, polys 61 per cent, small lym. 34 per cent, large lym. 4 per cent, eosin. 5 per cent. Gastric analysis: Free hydrochloric acid 44 degrees; total acidity 72 degrees. Stools positive for hook worm ova. X-ray findings: Duodenal ulcer.

Case 4.—Male, age 26, who had had indigestion for several years. He had been operated on for duodenal ulcer, gastro-enterostomy. His condition was not improved. His physical examination was negative. Hemoglobin 65 per cent, red blood cells 2,800,000, eosin. 11 per cent, no free hydrochloric acid. His stools were positive for hook worm ova. He was greatly improved after taking the treatment for hook worm.

Case 5.—White male child, 8 years of age. Influenza pneumonia. He had from six to eight bloody painless stools a day. His mother states that prior to this present illness he was subject to colitis for several years. After recovery from the pneumonia, hemoglobin was 60 per cent, red blood cells 3,000,000, eosinophiles 13 per cent. The stools were positive for hook worm and since the usual treatment for hook worm he has had no diarrhea.

The eggs are ellipsoid and segmented, and are usually divided into 4, 8, or 16 segments. They have a thin clear shell. In collecting the specimens, they should be put into a glass jar or bottle and corked tightly to keep them moist, as dry stools are unsatisfactory. A rather thin specimen is then put on a slide and mixed with a drop of water, using a

*Read before the Staff Meeting, at Tuomey Hospital, Sumter, S. C., April, 1943.

low powered lens. It is unnecessary to use the sedimentation test, as it takes too long.

The portal of infection is usually through the broken skin, on the feet of children, or on the hands of miners and plumbers. Sometimes the infection is by mouth. Loos has shown the larva enters the skin, is carried by the veins to the lungs, from there to the bronchi and trachea; through the eosophagus to the stomach and intestines. They usually live in the jejunum, but all first six feet of the intestines may be involved. They produce characteristic lesions of the mucous membrane of the small bowels.

The content of the bowels are very often blood stained. In the one hundred cases gastric analysis was made on seventy-nine, and in all, with the exception of *Case 3* in whom there was probably a duodenal ulcer, there was a hypochlorhydria.

Hook work disease very often resembles duodenal ulcer which, of course, does not often occur until after the age of thirty, but hook worm is most often first found in childhood. It often produces severe widespread pain in the upper abdomen, but it is not typical as is ulcer pain on an empty stomach.

These patients will tell you that taking soda very often gives temporary relief.

Thymol is the best treatment: Epsom salts should be given the night before, followed by 30 grains of thymol the next A. M.; two hours later this should be followed by 30 grains more, and two hours later another dose of salts should be given. The thymol can be given in a little whisky, orange juice, or grape fruit juice. Routinely we repeat this for three treatments.

Conclusion: All cases of chronic pain in the upper abdomen, especially with an increase of the eosinophile count should be examined by a competent technician for hook worm ova. Each condition will often show a small amount of blood in the stools. Duodenal ulcer and hook worm disease are sometimes associated in the same patient. The thymol treatment is the least toxic and the most effective of all those used.

Pre-Medical Education.

"Acceleration in medical schools does not involve any basic change except the elimination of the long summer vacations. A significant increase in weekly work by the student is not required. The pre-medical programs, however, shorten the program mainly by a weekly increase in the quantity of work carried by the student. . . .

"Whether or not students will be able to carry this heavy load remains to be seen. These students will, however, be free from financial worries and the necessity for outside employment. They will receive medical care, and more attention will be paid to the students' physical condition.

"The results of this experiment in concentrated pre-medical education will be watched with interest by all who are concerned with pre-professional education in every field, since it may offer a solution of the problem of reducing the long years of training required by the learned and scientific professions. . . . "

Discussing "The Supply of Physicians," *The Journal* says that "More than 4,000 seniors who entered the accelerated medical education program over a year ago are now well into their intern year and will complete that training before March 31, 1944. They will thus become available for military and civilian practice three months earlier than in normal times. Even half of these, should only that small proportion be commissioned, can care medically for over 300,000 troops. If this number of men is thereby enabled to enter active service three months early, before April of next year, the accelerated program will have justified itself in supplying the men required. . . ."

Postwar medical educational facilities are not being ignored. *The Journal* says that "Recognizing that large numbers of physicians will be seeking advanced training immediately after the war, the Council on Medical Education and Hospitals is making a careful study of the educational facilities in the graduate and postgraduate fields. A preliminary survey has already been instituted to determine what institutions and agencies will be able to expand their regular educational activities to meet additional postwar needs. . . . The large number of physicians who return to civilian life will likewise find that the medical profession, the schools and the hospitals stand ready to meet the educational needs of the postwar period."—(*J.A.M.A.*, Aug. 14, 1943, pg. 1126.)

HEPATIC FUNCTION IN ACUTE CHOLANGITIS A CASE REPORT*

NATHAN BLOOM, M.D.,
Richmond, Virginia.

There are many tests of liver function and frequent arguments arise as to their respective values. Those interested in a specific laboratory procedure show convincing proof of its efficacy, but only occasionally do these tests conform with clinical observation. In this particular case we were impressed with the close correlation between the clinical behavior of the patient and three liver function tests: the icteric index, cholesterol-cholesterol-ester ratio, and the hippuric acid excretion.

CASE HISTORY

A white male, 35 years old, had always been in good health, except for severe bronchial asthma in childhood and episodes of hay fever with food sensitivity, at infrequent intervals during his adult life. One month before the onset of this illness he was given tetanus antitoxin and typhoid vaccine, without any immediate ill effects. Five days before entering the hospital, the patient developed general malaise, headache, and a temperature of 101 degrees. Medication consisted of 6 grams of sulfathiazole daily for two days, and then 2 grams daily for three days. The patient continued to have fever and developed generalized aching about his body, with some nausea.

PHYSICAL EXAMINATION

An alert, pale, slightly lemon-tinged male, complaining of generalized itching about the body. There was a yellowish color to both sclerae. The lungs were clear and the heart was normal. Blood pressure 120/70. The abdomen was slightly distended and tender. A soft liver edge was felt 4 cm. below the right costal margin. There were no other abdominal masses. The rectal examination was negative except for a clay-colored stool. The calf muscles were not tender. The reflexes were normal.

COURSE IN THE HOSPITAL

The patient remained in our hospital for eighteen days. He was then confined to a naval base hospital for twenty-four days. The temperature subsided from 100 degrees to normal after three days and the patient gradually improved. His major complaint was severe itching. He was clinically asymptomatic except for a slight jaundice but, due to regulations, convalescence in a naval hospital was necessary.

The treatment in our hospital consisted of a high protein, high carbohydrate, high vitamin, low fat diet. The patient was also given intramuscular injections of Lederle's liver extract, 1 cc. daily; vitamin K and bile salts twice a day by mouth; elixir amino-acetic acid, 15 cc. three times a day orally; calcium gluconate, 10 cc. intravenously daily, and thiamin hydrochloride, 5 mgm. three times a day.

LABORATORY DATA

Urine:

5/12/42—Acid, specific gravity 1.018, negative albumin and sugar, positive bile, no casts or red blood cells on microscopic.

Blood: 5,480,000 RBC, Hgb. 113 per cent Sahli.

	WBC	P.M.N.	P.M.E.	P.M.B.	Lymphs	M.N.
5/12/42	5,300	54	4	1	19	15
5/13/42	4,400	48	6	1	34	11
5/16/42	4,100	38	6		45	9
5/20/42	5,900					
5/25/42	8,900	53	10	1	27	9

Reticulocytes:

5/18/42	5/20/42	5/21/42	5/25/42	5/28/42
2.6	1.2	1.8	2.6	1.8

Heterophile antibody negative. Prothrombin time—17 seconds. Mean corpuscular volume—109; mean corpuscular hemoglobin—32; mean corpuscular hemoglobin concentration—35. Non-protein nitrogen—30. Wassermann—negative.

5/12/42—Agglutinations negative, including proteus x 19 and Brucella.

5/14/42—Urine negative for leptospira icterohemorrhagica. Agglutination for Weil's disease negative.

Stools:

5/18/42—Negative for bile.

5/24/42—Positive for bile.

LABORATORY DATA RELEVANT TO DISCUSSION

Icteric Index:

5/13/42	5/14/42	5/16/42	5/18/42
36	40.4	62	58.6
5/20/42	5/22/42	5/25/42	5/28/42
58	55	44	38

From Department of Internal Medicine, Medical College of Virginia.

*Presented at Staff Meeting, Medical College of Virginia, May 13, 1943.

Cholesterol—Milligrams in 100 cc. of blood:

	Total	Free	Ester
5/14/42	125.5	105	20.5
5/18/42	205	170	35
5/24/42	272.5	212.5	60

Hippuric Acid Excretion in Urine:

5/18/42—Total volume 2010 cc., 0.964 grms.—benzoic acid as hippuric acid.

5/28/42—Total volume 2130 cc., 3.5 grms.—benzoic acid as hippuric acid.

DISCUSSION

There may be some question as to our clinical diagnosis of acute cholangitis. The points in favor of this diagnosis were the onset of a febrile ailment in a young man, with the development of jaundice, and enlargement of the liver. A sulfonamide reaction might produce the same clinical picture, but the findings of a leukopenia and increased monocytes in the peripheral blood smear are characteristic of acute cholangitis and would not be expected in any other form of hepatic disease associated with such a clinical picture. The icteric index is a simple color reaction, the standard being a 1-10,000 bichromate solution. It quite accurately shows the degree of jaundice but does not localize the involved area. Nevertheless, in this case the height of the icterus was compatible with other evidence of liver damage, and the gradual decline was in keeping with the general improvement of the patient.

The interpretation of changes in the blood cholesterol as related to hepatic disease by Hurxthal and Hunt,[1] Epstein,[2] and Greene,[3] indicate that, in the presence of hepatic injury, the cholesterol esters in the blood are reduced or absent. In normal individuals the cholesterol in the bile is present in the free state, while a considerable proportion of that in the blood is present in the esterified form. Bloor[4] states that there is a constant ratio of the combined cholesterol to the total cholesterol, varying from 65 to 75 per cent. When hepatic function is disrupted, there is a lowering of the total esterified cholesterol and a lessening of this physiologic ratio. This was true in our case and, as clinical improvement took place, this ratio rose from 15 to 22 per cent, with a rise in both total and esterified cholesterol.

In 1933, Quick[5] devised the hippuric acid excretion test as a method for evaluating the detoxifying function of the liver. The test is based on the conjugation of benzoic acid and glycine in the body. This reaction takes place in the liver under the influence of certain enzymes. The method of testing requires oral administration of 5.9 grams of sodium benzoate in a half glass of water. Quantitative urine specimens are collected at hourly intervals for four hours and the total amount of benzoic acid excreted as hippuric acid is estimated. Normal hippuric acid excretion averages 3 grams.

In this case the initial test, at the height of jaundice, showed less than 1 gram of hippuric acid excretion, and ten days later the excretion reached 3.5 grams, showing the return of normal detoxifying action of the liver.

It has been demonstrated that a combination of the icteric index, cholesterol-cholesterol-ester ratio and hippuric acid excretion tests would seem to be of great value in determining the extent and progress of liver damage. There are many other tests for liver function which are probably just as satisfactory; nevertheless, in this problem the procedures outlined seemed simple and adequate.

CONCLUSION

Acute cholangitis frequently causes severe liver damage which is not recognized by superficial clinical examination. Certain laboratory procedures help in determining the amount of damage. The liver has tremendous regenerative powers and in a short period of time hepatic injury has been repaired. The progress of this regeneration may be demonstrated by adequate liver function tests.

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1006 West Franklin Street.

CORRESPONDENCE

Will the Three Year Plan Last?

Richmond, Virginia,
August 9, 1943.

TO THE EDITOR:

Once more I must infringe upon your kind forbearance; this time to register my vehement objection to an editorial statement in the August issue of the VIRGINIA MEDICAL MONTHLY, page 427. In a discussion of the advisability of maintaining an accelerated medical course following the Duration, the statement is made that the faculty regard the long summer vacation as "their own especial time, necessary for their recovery from the strenuous winter teaching." This may be true in part, for undoubtedly a man is not able to retain a razor edge of mental keenness when teaching the same subject practically twice in one year. However, more important reasons for this hiatus are: first, to give the faculty time to carry on research; and secondly, to enable them to do the enormous amount of reading required to keep abreast of recent developments in their fields. Few men teaching in medical schools take an entire summer off, although some schools look with disfavor upon men not spending one quarter of the year away from the campus, provided they are productive scholars. Of course, what those men who do no research or who engage in no other productive scholastic activity do with their summer time no one seems to know, probably least of all themselves.

The editorial continues with the statement: "If this is really valid, the faculties can be enlarged. . . ." Of course they *can* be enlarged. The question is, *will* they be enlarged sufficiently so that any one man will have the same teaching schedule as before the war? This would require an increase in appropriations far above and beyond the increase in student revenue obtained by maintaining acceleration, to provide added salaries, quarters, and research budgets.

Little credit has been paid (or is expected by) the medical faculties of this country for unselfishly giving up time from their research, and income from consultative work and practice, in order to make acceleration possible—in most cases without any extra pay. Men with research interests, who are largely responsible for medical progress and education, will not consent to a permanent reduction in their time for research; rather than do year-round teaching they will turn to industry and practice where incomes are more commensurate with the amount of routine.

So much for the faculty. Now, for the most important contingent involved in this scheme: the students. I have already received complaints from students that under the accelerated program without the usual annual vacation period, they find that they are gradually falling behind, not only in digesting the subject material given them during the academic year, but in correlating the various subjects due to lack of time for proper reflection. Those who have had experience in schools which have long given work throughout the year inform me, furthermore, that as a rule students prefer to stretch the period of instruction over four years rather than to cram the material into a three year schedule.

All in all, I feel very strongly that, as done at present, acceleration of the medical curriculum is bad for the student, for the instructor, and worst of all for the patient of tomorrow. It is possible that some acceleration might be beneficial, but with adequate vacations at frequent intervals, as in the English system of higher education.

R. J. MAIN, PH.D.,
Professor of Physiology,
Medical College of Virginia.

Senate Bill 1161.

JEFFERSON HOSPITAL
PHILADELPHIA
August 10, 1943.

TO THE EDITOR:

I recently became very much interested in the new Bill that is now being prepared for Congress (S-1161). After reading it over, it suddenly occurred to me how little discussion I heard of it while I was carrying on my practice in Crewe, Virginia. Are we asleep or what? Do the practitioners in Virginia not realize that if this bill is passed private practice will be eliminated?

I enclose copy of a letter I have just written my congressman. I also enclose a copy of the literature sent to a friend of mine in the service, by the New Jersey State Medical Society.

I suggest that we do something similar in Virginia. Some of our boys back in Buckingham County may not know what has hit them until it's too late to do anything about it.

STANLEY H. MACHT, M.D.,
Resident in Radiology.

Vaccine Virus Used a Century Ago.

Richmond, Virginia,
July 20, 1943.

To the Editor:

The following is copy of a letter written by a Richmond physician, Dr. F. H. Dean, in 1848, to Mr. Martin B. Shepherd of Fluvanna County. I have learned that Mr. Shepherd was an intelligent land owner reminding one of William Byrd in his interest in those around him. The original letter, done in a very legible hand, was sealed without envelope and mailed without postage stamp but marked to show that five cents was paid to insure delivery.

W. T. SANGER,
President, Medical College of Virginia.

RICHMOND, JANUARY 14, 1848.

DEAR SIR:

Enclosed you will receive some fresh vaccine virus.

In order to vaccinate,—the matter must be reduced to the consistency of honey by the addition of a small quantity of water (a drop) a portion of it after it has been prepared is to be placed on some convenient part of the arm with a lancet—now make 10 or 12 punctures through the matter so slight as just to produce the appearance of blood,—before the sleeve is allowed to cover the arm, the matter should become dry, which will take 10 or 15 minutes. These are the only directions necessary to observe.

The virus I send you is taken from the arm of a healthy young person—matter procured directly from the cow is seldom used, that procured from the human subject being considered just as protective.

Most sincerely and truly
Signed — F. H. DEAN.

Letter addressed without any postage stamp to Martin B. Shepherd, Seven Island P. office, Fluvanna County, Va.

MILITARY MEDICINE
Virginia Doctors in Service
Supplement 5

This is the Fifth Supplement to the list of Virginia Doctors in Service, the original list appearing in the July 1942, MONTHLY, with supplements in September and October 1942 and January and April 1943. Names are given alphabetically, with home addresses, in view of constant changes in location and rank. The MONTHLY will appreciate it if any reader will advise of omissions that they may be included in a future supplement.

Members of Medical Society of Virginia

Dr. Charles V. Amole, Alexandria.
Dr. Nathaniel T. Ballou, Jr., Fredericksburg.
Dr. C. H. Bondurant, Riverton.
Dr. Harry Brick, Richmond.
Dr. Julius F. Chairsell, Christiansburg.
Dr. L. Philip Cox, Fredericksburg.
Dr. J. D. Creger, Dublin.
Dr. Robert H. Detwiler, Arlington.
Dr. Sandidge Evans, McClure.
Dr. I. D. Harris, Charlottesville.
Dr. A. M. Jacobson, Roanoke.
Dr. C. E. Jenkins, Alexandria.
Dr. Chas. F. Kincheloe, East Falls Church.
Dr. James P. King, Radford.
Dr. Nolton S. Lieberman, Norfolk.
Dr. J. T. McGriff, Arlington.
Dr. Marvin E. McRae, Luray.
Dr. Donald F. Marshall, Norfolk.
Dr. Milton Millman, Derby.
Dr. William M. Moir, Charlottesville.
Dr. C. D. Moore, Wytheville.
Dr. Dennis H. Robinson, Bedford.
Dr. Garland H. Wolfe, Abingdon.

Non-Members

Dr. E. W. Arnett, Danville.
Dr. Allen L. Byrd, Danville.
Dr. George Stone Ferrell, Lynchburg.
Dr. G. W. Shaed, Jr., Richmond.
Dr. E. B. Singleton, Richmond.
Dr. E. C. Stuart, Jr., Winchester.
Dr. Weir M. Tucker, Richmond.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a 20 year old rachitic dwarf who had no prenatal care, until the eighth month of her pregnancy, when she visited a physician who, without examining her, referred her to a hospital for Cesarean section at term. She was admitted to a hospital during the eighth month of her pregnancy. She was not in labor. She was examined and referred to a nursing home for a two weeks period and was instructed to return to the hospital two weeks before the estimated date of confinement. She returned to the hospital one month later in labor. The cervix at the time of admission was two centimeters dilated.

The only other record of the findings on examination at the time of admission, which is available to the committee, are some external pelvic measurements, which are recorded as follows: Spines 22, Crests 24, External Conjugate 17, Tuber Ischii 8. No internal measurements were made. There is no record of the presentation, position, or height of the presenting part. Likewise there is no mention of the clinical impression concerning disproportion. The urine showed two plus albumin and an occasional glanular cast. Labor was allowed to continue for three days during which time morphine, hyoscine and cyclopal sodium were given for sedation. On the second day of labor obstetrical pituitrin three drops were given on three occasions. On the third day of labor the patient was delivered of a stillborn child by forceps under gas-ether anesthesia. A mucus tear was repaired, sulfanilamide powder placed in the vagina and the vagina packed with gauze. One half cc. of pituitrin was given after delivery.

Three hours postpartum the pulse became weak and rapid and the breathing difficult. There was not an excessive amount of bleeding. The patient gradually grew weaker and died five hours postpartum without response to treatment, although there is no record available to the committee of the type of treatment employed at this time.

COMMENT

This case has been considered as a preventable obstetrical death. There was no adequate prenatal care. Even after the patient had been seen at the hospital and instructed to return in two weeks for abdominal delivery, she failed to follow the instructions and did not return until the onset of labor. The course pursued on the second admission to the hospital is difficult to harmonize with the instructions to the patient at the time of the first admission, when she was instructed to return in two weeks for an elective Cesarean section. When she did return in four weeks at the onset of labor she was delivered through the vagina after a three day labor. There is no information available to the committee to indicate why the change in plan in the method of delivery. One member of the committee aptly noted that "If a section was indicated two weeks before term, it was certainly indicated two weeks past term."

This patient of course should have had a careful evaluation of the size of the pelvis in relation to the size of the baby. Formerly the obstetrician had to rely entirely on his clinical acumen in determining disproportion. More recently the use of x-ray pelvimetry and lateral films of the pelvis at term have been of immense aid in arriving at a decision as to the advisable method of delivery. It is suspected that in this patient x-ray measurements and lateral films would have suggested the advisability of abdominal delivery.

The use of pituitrin in a case of dystocia is never to be recommended and its use was probably inadvisable in the present instance. It is stated that there was no excessive bleeding after the delivery, yet a pack was inserted in the vagina. One wonders why the vagina was packed if there was no excessive bleeding. It is assumed that intravenous fluids and transfusions of plasma or whole blood or both were administered after the patient developed the rapid weak pulse, as the record states that she died without response to treatment.

It is quite likely that this patient had a ruptured uterus following the prolonged labor with probable bony dystocia, pituitrin and operative de-

livery. If so, early diagnosis with hysterectomy and copious transfusions may have been life saving measures. In any event, in instances of prolonged labor every effort should be made to obtain periods of rest with sedatives, and an adequate fluid and food intake should be maintained. Whenever possible maternal exhaustion and dehydration should be avoided.

PLAN FOR MEDICAL CARE OF WIVES AND INFANTS OF ENLISTED MEN

The plan for the care of the wives and infants of enlisted men in the armed forces as accepted by the Council of the Medical Society of Virginia is summarized below. This report is being made by the Committee on Maternal Health since reports from other states have shown that maternity cases comprise more than ninety-five per cent (95%) of those applying for care. The essential features of the program which was put into effect recently are:

Maternity cases as well as infants up to one year of age who are dependents of enlisted men of specified grades are eligible for care.

1. Care may be provided in Virginia for eligible patients who are within the boundaries of the State at the time care is necessary. Legal residence within the State is not required. Legal residents of Virginia who are beyond the boundaries of the State at the time care is necessary should apply to that State in which care is to be furnished.
2. Normal as well as cases with pathology are eligible.
3. Financial status is disregarded.
4. Home or *ward care* in hospitals agreeing to take these patients may be requested.
5. The funds authorized for ward hospital care cannot be used in part payment for more expensive hospital accommodations.
6. Self-explanatory application forms are available. *The patient has full choice of physician.*
7. Services rendered prior to date of authorization cannot be paid for except in emergencies.
8. The State Department of Health is to be the sole source of payment for services rendered. Federal funds finance the program.
9. Fees for professional services are to conform to the fee schedule specified by the U. S. Children's Bureau.
10. The authorization to the physician for care of the patient carries a form on which the bill is to be rendered to the State Department of Health.
11. The authorization to the patient carries with it the form to be used for admission in case hospitalization is advised.
12. The application forms are available from State and County Health and Welfare agencies, hospitals, American Red Cross Chapters, prenatal clinics, community agencies, and will be mailed to patients and physicians upon request.
13. Applications and correspondence relative to the care of these patients will be cleared through the Bureau of Maternal and Child Health, Virginia State Department of Health, Richmond, 19, Virginia.

The following fee schedule conforms with those accepted by other states, but it is less than that which was requested by the Virginia State Department of Health:

OBSTETRIC CARE

COMPLETE OBSTETRIC CARE ---------- $45.00

Complete medical services including care during the prenatal period, labor, and puerperium, as well as care of complications, obstetric operations, postpartum care, care of the newborn infant, postpartum examination six weeks after delivery, blood test for syphilis, urinalyses and hemoglobin determinations, and other tests if needed.

FOR SERVICES LESS THAN THE ABOVE THE FEES ARE AS FOLLOWS:

Prenatal Care ---------- $10.00

For complete prenatal care, including complete physical examination and necessary tests at first visit and four subsequent visits.

If less than above, $2.00 per visit.

Labor and Delivery:

For complete care during labor, delivery, and immediate puerperium ----------$30.00

For abortion or miscarriage before the 7th month of gestation----------$15.00

Postpartum Care:

For care of the mother and newborn infant and a postpartum examination at the end of six weeks ----------$ 5.00

OBSTETRIC CONSULTATION:

Services of a qualified consultant may be requested. An approved list of consultants will be established, based upon recommendations of the Maternal Health Committee of the Medical Society of Virginia:

1. Simple Bedside Consultation-------$ 5.00
2. Consultant services, including assistance at the time of an operative delivery ----------$15.00
3. Consultant services involving major surgery such as entrance into the abdominal cavity or cesarean section--$30.00

For services requiring travel in excess of ten miles but not more than fifteen (one way) from the consultant's place of residence $5.00 may be allowed in addition to the above fees. Ten dollars, in addition to the specified fees, may be allowed a consultant for travel in excess of fifteen miles.

PEDIATRIC CARE

Pediatric care is limited to care of the infant during the first year of life. (Crippled children are to be referred for care to the Crippled Children's Bureau):

First visit—Home ----------$4.00
Office or hospital ---------- 3.00
Subsequent visits—Home ---------- 3.00
Office ---------- 2.00

Provisions for payment will be limited to a maximum of $12.00 for first week and $8.00 for care during any subsequent week.

Well Child Supervision:

For routine medical supervision of the infant, including immunizations, and for visits at not less than four-week intervals, per visit, $1.00.

Pediatric Surgery:

To include complete surgical care of the infant during the first year of life:

1. Minor surgery ----------$ 5.00
2. Major surgery, including entrance into the thoracic or abdominal cavities and surgical treatment of major congenital defects not otherwise provided for under services for crippled children- 30.00

Pediatric Consultant Service:

Services of a qualified consultant may be requested. An approved list of consultants will be established, based upon recommendations of the Child Welfare Committee of the Medical Society of Virginia:

1. Bedside Consultation ----------$ 5.00
2. Consultant services involving minor surgery ---------- 10.00
3. Consultant services involving major surgery, as described under Pediatric Surgery ---------- 30.00

For services requiring travel an addition to the fees specified may be made as described under Obstetric Consultation.

MENTAL HYGIENE
Beers' Grandiose Idea

WILLIAM SHANDS MEACHAM,
State Parole Commissioner,
Richmond, Virginia.

It was noon on a sunny day in June, 1900, that Clifford Whittingham Beers, obsessed by the belief that he had become an epileptic, decided to end his life by hurling himself from the fourth floor of his home in New Haven, Connecticut. It was a curious whim of his sick mind that saved Beers' life for the new day of the humanities which was just dawning at the turn of the century. He actually took hold of a window sill with his hands and dropped to the ground. He landed on soft earth, only three inches from a stone pavement. It would not perhaps be strictly accurate to say that this three inches represented, at that critical hour, the margin of safety for a reformation in the methods of treating the insane in the United States, or for a far-reaching change in the public attitude toward mental illness in America, and throughout the world. It was high time that the public took a sane attitude toward those in mental hospitals, and the reformation, which was long overdue, would have found courageous leaders even if Clifford Beers had never had a rendezvous with the destiny that made him the founder of the mental hygiene movement.

When Beers wrote *A Mind That Found Itself,* there were leaders of psychiatry already working toward the goals of the movement for which the book became a great evangel. The humanitarian movement which had so animated thought in England and America during the latter years of the eighteenth-century intellectualism, was beginning to flower on many fronts of practical humanitarian effort. Preventive medicine was gaining a new impetus in every field. The lash and the chain were being abandoned in our prisons and talk was of the new "corrective justice", and of probation and parole. It was time for mental medicine to let go of the straightjacket.

Yet if Beers had not lived and worked, the light would have spread more slowly in a saner world, in which we no longer regarded the mentally sick as criminals, or persons possessed by devils. When death came to Dr. Beers a few weeks ago, the light had spread all over the world, and his great book had been translated into every civilized tongue.

The founder of the National Committee for Mental Hygiene had graduated from Yale University three years before he dropped from the window of his home, to suffer no greater injuries than fractured bones in his feet and a sprained back, but to find himself in the midst of a world of unreality from which it took him three years to escape. During these years, he went many times from the pits of depression and fancied persecution, to the heights of delusions of grandeur. As a patient, he ran the entire gamut of the stupid and cruel treatment given in the mental hospitals of the day. He was in a private hospital operated for profit; was later transferred to a non-profit making private institution, and then to a public hospital. The weak did not survive the treatment the mentally ill received in those years, but Beers was strong, with a will that was unbeatable and a memory that remained intact to record his remarkable experiences in a work of genius.

A Mind That Found Itself was a great book, and not merely the literary result of a crusading zeal for reform. As literature, it will live in the English language. When it was published in 1908, William James wrote the introduction. Our Harvard philosopher, whose treatise on "Habit" is as immortal as Rip Van Winkle, recognized the greatness of Beers' book at once. It was written with a lapidarian care, and actually was the literary distillation of the flood of words which Beers wrote in a state of elation during the last months of his illness, when he had caught the vision of a worldwide campaign to humanize the treatment of insanity, and to prevent mental illness. His was a grandiose idea that was translated into the realities of a new era of psychiatry. Once after his discharge from the hospital, Beers had a brief relapse, and went to a private institution for a month of treatment. His recovery was complete, and when he died a few weeks ago, he had received worldwide honors for a long life of achievement in a field of the humanities which he had charted himself.

Beers classic autobiography of his manic depressive psychosis increased the insight of psychiatrists into the thought processes of the mentally ill. His book and his dynamic career as the leader of the mental hygiene movement, destroyed the foundations of the fatalism that so long chained the progress of mental medicine. The force of his grandiose idea expanded the world of sanity.

SPECIAL MEETING OF THE COUNCIL, MEDICAL SOCIETY OF VIRGINIA

A special meeting of the Council was held at noon, June 25, 1943, in the Society's office, upon suggestion of the State Health Commissioner. Dr. J. M. Emmett, president, presided. Others attending were: Dr. Waverly R. Payne, vice-president; Drs. J. L. Rawls, J. M. Hutcheson, J. L. Hamner, W. C. Akers, and H. B. Mulholland, councilors; Dr. I. C. Riggin, State Health Commissioner; Dr. A. L. Carson, director of the Bureau of Maternal and Child Health of the State Department of Health; and Drs. H. H. Ware and Emily Gardner of the Maternal Health and Child Welfare Committees of the Society.

Being asked by Dr. Emmett for a statement as to the purpose of this meeting, Dr. Riggin said so much pressure had been brought to bear upon the State Health Department by the U. S. Children's Bureau with regard to hospitalization in maternity cases for the wives and infants of enlisted personnel of the armed forces that he felt the subject justified a reconsideration of the Council's action at its January meeting.

The plan proposed by the Children's Bureau is for the care of the wives and infants of men in the Service who make $72.00 a month or less and they will be given the service whether or not they are able to pay. They are to be placed in ward beds, even in private hospitals, and the fees are to be paid the doctors by the government. Dr. Riggin was still opposed in principle to some of the features of this bill but thought it might be well for the Council to reconsider their action, as a number of states have adopted a modified plan and it is likely Virginia may have to accept some plan.

Upon request, Dr. Carson presented an abstract of the plan proposed by the U. S. Children's Bureau, along with their suggestions for fees for physicians. The Virginia State Department of Health had worked out a higher fee schedule which was presented to the Council for consideration before being sent to the U. S. Children's Bureau for their approval. Attention was called to the fact that the fees in this revision are higher than those proposed by the Children's Bureau and may not be approved by them.*

In the discussion following, Dr. Payne said that, as it now is, these cases are going in the wards of the hospitals and physicians receive nothing.

Dr. Rawls moved that the Council go on record as favoring the acceptance of Federal funds from the U. S. Children's Bureau for maternity and infant care for wives and infants of certain enlisted military men, the program in Virginia to be under the direction of the State Health Department. This was carried and Dr. Riggin said Dr. Carson's department would submit the revised schedule to the Bureau for approval.

Dr. Emmett then read a letter from Dr. P. W. Boyd, president of the State Board of Medical Examiners, advising of the resignation from the Board of Dr. I. C. Harrison, on account of ill health. He asked that the Council make a recommendation to fill this vacancy. It was the consensus of opinion that this matter should be held over for action by the House of Delegates.

Adjournment followed.

AGNES V. EDWARDS,
Secretary.

Approved:
J. M. EMMETT,
President.

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*The essential features of the plan and fee schedule as finally approved appear on page 462.

Presidents of the Medical Society of Virginia

President	Year of Meeting
*Dr. James McClurg, Richmond	1821
*Dr. William Foushee, Richmond	1822
*Dr. William Foushee, Richmond	1823
*Dr. James Henderson, Richmond	1824
Meetings Discontinued.	
*Dr. Robert William Haxall, Richmond	1841
*Dr. Robert William Haxall, Richmond	1842
*Dr. Frederick Marx, Richmond	1843
*Dr. Thomas Nelson, Richmond	1844
*Dr. William A Patteson, Richmond	1845
*Dr. William A Patteson, Richmond	1846
*Dr. John A. Cunningham, Richmond	1847
*Dr. William A Patteson, Richmond	1848
	1849
*Dr. Robert William Haxall, Richmond	1850
*Dr. Beverley R. Wellford, Fredericksburg	1851
*Dr. James Beale, Richmond	1852
*Dr. Thomas P. Atkinson, Danville	1853
*Dr. Carter P. Johnson, Richmond	1854
*Dr. H. C. Worsham, Dinwiddie	1855
*Dr. H. C. Worsham, Dinwiddie	1856
*Dr. James Bolton, Richmond	1857
*Dr. Levin S. Joynes, Richmond	1858
*Dr. R. S. Payne, Lynchburg	1870
*Dr. R. S. Payne, Lynchburg	1871
*Dr. A. M. Fauntleroy, Staunton	1872
*Dr. Harvey Black, Blacksburg	1873
*Dr. A. G. Tebault, London Bridge	1874
*Dr. S. C. Gleaves, Wytheville	1875
*Dr. F. D. Cunningham, Richmond	1876
*Dr. J. L. Cabell, University	1877
*Dr. J. H. Claiborne, Petersburg	1878
*Dr. L. S. Joynes, Richmond	1879
*Dr. Henry Latham, Lynchburg	1880
*Dr. Hunter McGuire, Richmond	1881
*Dr. G. W. Semple, Hampton	1882
*Dr. W. D. Cooper, Morrisville	1883
*Dr. J. E. Chancellor, Charlottesville	1884
*Dr. S. K. Jackson, Norfolk	1885
*Dr. Rawley W. Martin, Chatham	1886
*Dr. Bedford Brown, Alexandria	1887
*Dr. Benjamin Blackford, Lynchburg	1888
*Dr. E. W. Row, Orange C. H.	1889
*Dr. Oscar Wiley, Salem	1890
*Dr. W. W. Parker, Richmond	1891
*Dr. H. Grey Latham, Lynchburg	1892
*Dr. Herbert M. Nash, Norfolk	1893
*Dr. Wm. P. McGuire, Winchester	1894
*Dr. Robt. J. Preston, Abingdon	1895
*Dr. Wm. L. Robinson, Danville	1896
*Dr. Geo. Ben Johnston. Richmond	1897
*Dr. Lewis E. Harvie, Danville	1898
*Dr. Jacob Michaux, Richmond	1899
*Dr. Hugh T. Nelson, Charlottesville	1900
*Dr. J. R. Gildersleeve, Tazewell	1901
*Dr. R. S. Martin, Stuart	1902
*Dr. J. N. Upshur, Richmond	1903
*Dr. Joseph A. Gale, Roanoke	1904
*Dr. Wm. S. Christian, Urbanna	1905
Dr. Lomax Gwathmey, Norfolk	1906
*Dr. Paul B. Barringer, Charlottesville	1907
*Dr. Wm. F. Drewry, Petersburg	1908
Dr. Stuart McGuire, Richmond	1909
*Dr. E. T. Brady, Abingdon	1910
*Dr. O. C. Wright, Jarratt	1911
*Dr. Hugh M. Taylor, Richmond	1912
*Dr. Southgate Leigh, Norfolk	1913
*Dr. Stephen Harnsberger, Catlett	1914
*Dr. Samuel Lile, Lynchburg	1915
*Dr. Joseph A. White, Richmond	1916
*Dr. Geo. A. Stover, South Boston	1917
*Dr. E. G. Williams, Richmond	1919†
*Dr. Paulus A. Irving, Farmville	1920
*Dr. Alfred L. Gray, Richmond	1921
*Dr. E. C. S. Taliaferro, Norfolk	1922
*Dr. John Staige Davis, University	1923
*Dr. W. W. Chaffin, Pulaski	1924
Dr. Hunter H. McGuire, Winchester	1925
Dr. W. L. Harris, Norfolk	1926
Dr. J. Shelton Horsley, Richmond	1927
Dr. J. W. Preston, Roanoke	1928
Dr. J. Bolling Jones, Petersburg	1929
*Dr. Charles R. Grandy, Norfolk	1930
*Dr. J. Allison Hodges, Richmond	1931
Dr. I. C. Harrison, Danville	1932
*Dr. J. C. Flippin, University	1933
Dr. R. D. Bates, Newtown	1934
Dr. F. H. Smith, Abingdon	1935
Dr. P. St. L. Moncure, Norfolk	1936
Dr. J. M. Hutcheson, Richmond	1937
Dr. G. F. Simpson, Purcellville	1938
Dr. A. F. Robertson, Jr., Staunton	1939
Dr. H. H. Trout, Roanoke	1940
Dr. W. B. Martin, Norfolk	1941
Dr. Roshier W. Miller, Richmond	1942
Dr. J. M. Emmett, Clifton Forge	1943

*Deceased.
†Owing to influenza epidemic and World War, meeting not held in 1918, and Dr. Williams continued as President.

PROGRAM

(PRELIMINARY)

MEDICAL SOCIETY OF VIRGINIA

October 25, 26, and 27, 1943

Roanoke, Virginia

Headquarters—HOTEL ROANOKE

BUSINESS SESSIONS

Monday, October 25

9:00 A.M.

REGISTRATION

9:30 A.M.

COUNCIL—Parlor 224

11:00 A.M.

HOUSE OF DELEGATES—Parlors A, B, C, and D

Tuesday, October 26

HOUSE OF DELEGATES—Time and Place to be announced

SCIENTIFIC SESSIONS

Monday, October 25

2:30 P.M.

Ballroom

Functional Uterine Bleeding—WILLIAM BICKERS, M.D., Richmond

A series of cases describing functional bleeding in the absence of organic disease. *Lantern slides* will demonstrate the endometrial pattern before and after treatment. The steps leading to accurate diagnosis will be shown in outline and the treatment described. Cyclic administration of Stilbestrol and Progesterone in the treatment of functional uterine bleeding will be described in detail and the effects of endocrine therapy upon the ovary and the endometrium.

Discussion—F. O. PLUNKETT, M.D., Lynchburg

Demerol: A Synthetic Morphine Substitute—CHARLES STANLEY WHITE, M.D., Washington, D. C.

Demerol, Dolantin or D140, as it is technically designated, is the nearest approach to a substitute for opium and its derivatives for relief of pain. It is the first product of uniform chemistry, synthetically prepared, which combines the action of morphine and atropine to a very great degree. These observations are confined chiefly to its use in general surgical practice and the work is summarized in a brief report.

Discussion—H. H. WARE, JR., M.D., Richmond
S. A. VEST, M.D., Charlottesville

Medical Progress During the Last Sixty Years—M. O. BURKE, M.D., Richmond

Evolution of medical colleges; preventive medicine; scientific diagnosis; specific medical treatment; treatment of the disease that afflicts the patient and treating the patient who is afflicted.

Discussion—JAMES K. HALL, M.D., Richmond

The Kenny Treatment for Poliomyelitis: One Year of Observation—CHARLES J. FRANKEL, M.D., Charlottesville

This paper includes the record of involvement and progress made on six cases which have been treated at the University Hospital, following rigidly the concepts of the Kenny method.

Discussion—ROBERT V. FUNSTEN, M.D., Charlottesville

The Treatment of Alcoholic Addicts—DAVID C. WILSON, M.D., Charlottesville.

Discussion of treatment of cases at the University Hospital, including those treated by psychotherapy and those by conditioned reflex, and also a discussion of methods of treatment that have been used in this and other countries, with conclusions regarding the necessary setup for a successful treatment of alcoholics in the State of Virginia.

Discussion—R. FINLEY GAYLE, M.D., Richmond

Monday, October 25

8:00 P.M.

Open to Public

Ballroom

Call to Order—JOHN O. BOYD, M.D., General Chairman, Committee on Arrangements

Invocation

Announcements

President's Address—JOHN MOREHEAD EMMETT, M.D., Clifton Forge

Memorial Hour—J. BOLLING JONES, M.D., Petersburg, Chairman Membership Committee

Address—Medical Operations in the Pacific Theatres—*Invited Guest*, C. C. HILLMAN, Brigadier General, Medical Corps, U. S. Army.

Tuesday, October 26

9:30 A.M.

Ballroom

Agranulocytic Angina—A Drug Hazard—ERNEST L. COPLEY, M.D., Richmond

This study deals with the hitherto rare disease entity, Agranulocytic Angina. Its etiology, an idiosyncrasy to certain drugs, is emphasized. Three cases are presented in outline, and some means of prevention are suggested. *Lantern slides.*

Discussion—WILLIAM B. PORTER, M.D., Richmond

The Treatment of New Growths at the Recto-Sigmoid—FRANK S. JOHNS, M.D., Richmond

Attention is called to the frequency of new growths at the recto-sigmoid, emphasizing the duration of such patients' illness before the physician and surgeon were consulted. When first seen, many are late, advanced cases, with local and general metastasis, and are already too late for surgical aid. A plea is made for a better understanding of the symptoms and earlier diagnosis of such growths, plus the indicated radical treatment for same.

Discussion—ALFRED P. JONES, M.D., Roanoke

Tuberculosis in the Aged—C. L. HARRELL, M. D., Norfolk

For many years tuberculosis has been called a disease of youth. It is the feeling of the writer that the age of expectancy has been greatly increased, as many more patients now coming up for examination are found to have tuberculosis beyond the age of 50 than were found a few years ago. *Lantern slides.*

Discussion—N. G. WILSON, M.D., Norfolk

The Continuance of Symptoms after Surgery of the Bile Tract—ERNEST T. TRICE, Lt. Colonel, M.C., Richmond.

Results of medical and surgical treatment are compared. The belief is expressed that surgical is many times superior to medical treatment, that there is hazard in delay, and that delay often results in extensive liver damage, with complications in the pancreas. *Lantern slides.*

Discussion—T. N. BARNETT, M.D., Richmond

Femoral Vein Ligation in the Treatment of Pulmonary Embolism Due to Femoral Thrombophlebitis—EUGENE L. LOWENBERG, M.D., Norfolk

Approximately one patient in twelve who survives an embolus due to femoral thrombophlebitis will have a subsequent embolus from which they will die. The phenomenon is purely a mechanical one, the emolus breaking off from the clot in the femoral vein and passing through the heart to the pulmonary artery. Emboli can with certainty be stopped by ligating and dividing the femoral vein proximal to the thrombophlebitic lesion. The site of the clot in the femoral vein can be determined by phlebograms. Two case reports, *phlebograms,* and a discussion of the operative procedure are included.

Discussion—HUGH H. TROUT, M.D., Roanoke

Pelvic Pain—Randolph H. HOGE, M.D., Richmond

This paper deals briefly with (1) the mechanism of pelvic pain, (2) a consideration of the anatomical pathways of the painful impulses, and (3) certain methods aimed at the relief of this pain. *Lantern slides.*

Discussion—C. C. COLEMAN, M.D., Richmond

Tuesday, October 26

2:30 P.M.

Ballroom

The Diagnostic Value and the Technique of the Aspiration Biopsy of Sternal Marrow—M. L. DREYFUSS, M.D., Clifton Forge

The examination of the blood forming organs, in addition to peripheral blood studies, is an important and frequently indispensable part of a hematological study. Illustrative cases are presented. The technique of the aspiration biopsy is discussed and a simple and efficient way of handling the specimen is described. *Lantern slides.*

Discussion—

The Prevalence and Diagnosis of Rickettsial Diseases—HARRY H. HENDERSON, M.D., Richmond

A discussion of the difficulties and methods of diagnosis and the prevalence and characteristics of these diseases in Virginia and neighboring states.

Discussion—H. B. MULHOLLAND, M.D., Charlottesville

Diabetic Coma—WILLIAM R. JORDAN, M.D., Richmond

A discussion of the treatment of about twenty cases of diabetic coma, including observations of symptoms and signs.

Discussion—C. D. NOFSINGER, M.D., Roanoke

Asthmatic Atelectasis Simulating Pneumonia—
DEAN B. COLE, M.D., Richmond
L. JAMES BUIS, M.D., Richmond

The importance of differentiating asthmatic acute pulmonary atelectasis from pneumonia is stressed, since the treatment of the two conditions varies markedly. Prompt recognition of the atelectasis is imperative to lessen not only the immediate morbidity but the irreversible pathological change which may result. Diagnosis may be made by correct interpretation of the history, physical signs, and x-ray films. It may be confirmed by lung mapping. Treatment consists of opening the airway and may necessitate bronchoscopy. Cases. *Lantern slides.*

Discussion—

Tuesday, October 26

6:00 P.M.

COCKTAIL PARTY, DINNER AND ENTERTAINMENT

8:30 P.M.

Address—*Invited Guest,* DON S. KNOWLTON, Captain, (MC), USNR.

Wednesday, October 27
9:30 A.M.
Ballroom

Acute Surgical Conditions Complicating Malignancy—JULIAN L. RAWLS, M.D., Norfolk

A statement as to the tendency of physicians to overlook acute surgical conditions arising in the course of treatment of patients with malignancies and a report of several cases seen recently.

Discussion—JOSEPH D. COLLINS, M.D., Portsmouth

Address—*Invited Guest*, JOHN Q. OWSLEY, Captain, Medical Corps, U. S. Army.

Recent Advances in the Pharmacology of Nicotine—
H. B. HAAG, M.D., Richmond
P. S. LARSON, Ph.D., Richmond

A report of recent studies conducted at the Medical College of Virginia on the effect of tobacco smoke and nicotine on human subjects and animals.

Discussion—EMIL BOGEN, Lt. Comdr., M.C., Norfolk Naval Hospital, Portsmouth
DOUGLAS G. CHAPMAN, M.D., Richmond

Reports and Observations on About Two Hundred Cases of Whooping Cough—
WILLIAM B. MCILWAINE, M.D., Petersburg
LETA J. WHITE, M.D., Petersburg

During the whooping cough epidemic in the Spring of 1943, every effort was made to determine the value of various prophylactic measures and also modern treatment.

Discussion—SAMUEL A. ANDERSON, M.D., Richmond

The Diagnosis and Medical Treatment of Pulmonary Embolism—JULIAN R. BECKWITH, M.D., Clifton Forge

A review of the principles of the pathological physiology of pulmonary embolism is presented. The rationale of medical treatment is discussed and three case reports given.

Discussion—EMMETT C. MATTHEWS, M.D., Richmond

Plastic Surgery of Severe Burns—EVERETT I. EVANS, M.D., Richmond

Discussion—

Special Society Luncheons
Tuesday, October 26
1:00 P.M.

Meetings Will Follow General Luncheon

AMERICAN COLLEGE OF PHYSICIANS, VIRGINIA SECTION
VIRGINIA OBSTETRICAL AND GYNECOLOGICAL SOCIETY
VIRGINIA ORTHOPEDIC SOCIETY
VIRGINIA PEDIATRIC SOCIETY
VIRGINIA RADIOLOGICAL SOCIETY
VIRGINIA UROLOGICAL SOCIETY

Wednesday, October 27
8:00 A.M.
Breakfast

ALUMNI ASSOCIATION, MEDICAL COLLEGE OF VIRGINIA

SCIENTIFIC EXHIBITS
Section of Ballroom

Activities of the State Health Department—
I. C. RIGGIN, M.D., Richmond
J. C. FUNK, Ph.D., Richmond

Correlation of the Physician and the Bacteriologist—
FREDERICK W. SHAW, M.D.,
F. J. GOODFELT, M.D.,
Medical College of Virginia, Richmond

The Nerves of the Female Genitals—
RANDOLPH H. HOGE, M.D.
LOUISE JONES, Technician
Medical College of Virginia, Richmond

Uterine Bleeding—WILLIAM BICKERS, M.D., Richmond

Carcinoma of the Larynx and Certain Lesions of the Esophagus—
F. D. WOODWARD, M.D., Charlottesville
M. K. HUMPHRIES, M.D., Charlottesville

COMMERCIAL EXHIBITORS
Palm Room and Peacock Alley

Coca-Cola Company
S. M. A. Corporation
Holland-Rantos Company
Van Pelt & Brown
Peoples Service Drug Stores
Eli Lilly & Company
Camel Cigarettes
Gilliland Laboratories
Ortho Products Company
Philip Morris Cigarettes
The Borden Company
A. S. Aloe & Company
Powers & Anderson
John Wyeth & Brother
E. R. Squibb & Sons
C. B. Fleet Company
Mead Johnson & Company
Ciba Pharmaceutical Products
Schering Corporation
Doak Company
General Electric X-Ray Corporation
Tablerock Laboratories

Public Health

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for July, 1943, compared with the same month in 1942, and for the period of January through July, 1943, compared with the same period in 1942, follows:

	July 1943	July 1942	Jan.-July 1943	Jan.-July 1942
Typhoid and Paratyphoid Fever	35	25	105	100
Diarrhea and Dysentery	1697	1166	2625	2079
Measles	322	124	9191	4748
Scarlet Fever	56	28	1089	737
Diphtheria	18	22	181	236
Poliomyelitis	7	4	22	11
Meningitis	53	11	693	114
Undulant Fever	9	3	23	17
Rocky Mountain Spotted Fever	19	11	28	25
Tularemia	1	4	28	26

BOTULISM

Because of the need for and rationing of food, more vegetables and fruit probably will be canned at home this year than ever before. Many who realize the need for safe processing of food will be unable to obtain steam pressure canners necessary for efficient sterilization.

Botulism is the most fatal type of food poisoning caused by bacteria or bacterial toxins. As Cl. botulinum is a common soil anaerobe, is spore forming and therefore very resistant to heat, and forms an exotoxin which may retain its potency indefinitely, an increase in botulism is not unlikely in the near future.

Most of the botulism reported in Europe has followed the eating of preserved meats, while in the United States home-canned vegetables have caused the greatest number of cases. Although nonacid foods have been responsible for more cases than acid food, there are outbreaks on record due to acid foods.

Two things should be remembered, that food containing botulinum toxin may not show any evidence of spoilage, and that after symptoms appear the toxin has probably produced damage which cannot be overcome by specific antitoxin.

The time that elapses after the eating of food containing botulinum toxin varies widely, depending on the amount of toxin ingested. While symptoms usually appear within 12 to 36 hours, there are cases reported in which symptoms did not develop until 108 hours after the contaminated food was consumed.

While specific serum therapy in botulism gives best curative results, polyvalent antitoxin may be given when the specific type of botulinum is unknown.

In the laboratory diagnosis of botulism the most valuable specimen is a sample of the suspected food in the original container. Since Cl. botulinum is widespread in nature it could easily be introduced at the time of collection of the sample. Therefore, greatest care should be taken in the selection of a container and transfer of the sample in order to avoid contamination.

Woman's Auxiliary
to the
Medical Society of Virginia

President—MRS. H. W. ROGERS, Norfolk.
President-Elect—MRS. W. CLYDE WEST, Alexandria.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. ALBERT G. HORTON, Norfolk.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. C. E. ARNETTE, Alexandria.

Convention Call!

I hope many are preparing to attend the Convention of the Woman's Auxiliary to the Medical Society of Virginia, which will be held in Roanoke, October 25-27.

On Monday evening, the 25th, the Pre-Convention Board meeting will be held. All officers, committee chairmen, and county presidents are expected to attend, and all county presidents-elect are invited to attend. Tuesday morning, the 26th, at 9:30, will be the opening of the regular business session, which will be followed by a luncheon.

All meetings will be held at Hotel Roanoke. Mrs. A. P. Jones, 1317 Franklin Road, Roanoke, is chairman of arrangements. This convention will celebrate our 21st anniversary as the Woman's Auxiliary to the Medical Society of Virginia.

Wives of physicians are invited to attend whether they are members of an auxiliary or not.

It is genuine hospitality in Roanoke having us come back for the second consecutive year. Let's show our appreciation by having a good attendance. Full program will appear in the October issue of the MONTHLY.

REBECCA S. ROGERS,
(MRS. H. W.)
President.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

A Synopsis of Clinical Syphilis. By JAMES KIRBY HOWLES, B.S., M.D., M.M.S., Professor of Dermatology and Syphilology, and Director of the Department, Louisiana State University School of Medicine; Senior Visiting Physician, Charity Hospital of Louisiana at New Orleans; etc. St. Louis, The C. V. Mosby Company. 1943. 671 Pages With 121 Text Illustrations and 2 Color Plates. Cloth. Price, $6.00.

Medical Malpractice. By LOUIS J. REGAN, M.D., LL.B., Member State Bar of California. St. Louis, The C. V. Mosby Company. 1943. 256 Pages. Cloth. Price, $5.00.

Methods of Treatment. By LOGAN CLENDENING, M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospitals. And EDWARD H. HASHINGER, A.B., M.D., Clinical Professor of Medicine, Medical Department of the University of Kansas; Attending Physician, University of Kansas Hospital; etc. Eighth Edition. St. Louis, The C. V. Mosby Company. 1943. 1033 Pages. Illustrated. Cloth. Price, $10.00.

Rehabiltation of the War Injured. A Symposium Edited by WILLIAM BROWN DOHERTY, M.D., and DAGOBERT D. RUNES, Ph.D. Philosophical Library, New York. 1943. 684 Pages. Illustrated. Cloth. Price, $10.00.

The Boy Sex Offender and His Later Career. By LEWIS J. DOSHAY, M.D., PH.D., Psychiatrist, Children's Courts, New York City. Foreword by George W. Henry, M.D., Associate Professor of Clinical Psychiatry, Cornell University Medical College; etc. New York, Grune and Stratton. 1943. 248 pages. Cloth. Price $3.50.

Handbook of Tropical Medicine. By ALFRED C. REED, M.D., Associate Clinical Professor of Medicine, Stanford University School of Medicine. And J. C. GEIGER, M.D., Director of Public Health, San Francisco. Stanford University Press, Stanford University, Calif. 1943. Pocket size—188 pages. Cloth. Price $1.50.

Mental Health in College. By CLEMENTS C. FRY, M.D., Lecturer in Psychiatry and Mental Hygiene and Psychiatrist to the Department of University Health, Yale University. With the Collaboration of EDNA G. ROSTOW, Research Assistant in Psychiatry and Mental Hygiene, Yale University. New York. The Commonwealth Fund. 1942. xix-365 pages. Cloth. Price $2.00

This volume, in the usual attractive format of Commonwealth Fund publications, is a sound presentation by case history method of the mental health (and ill-health) problems of the college and university students. The experience of the author and his colleagues at Yale University, as outlined in this volume, has established a pattern worthy of Yale and an objective toward which every college should strive. The material is presented in simple, direct language which makes it interesting reading, equally to the medical student, practitioner, and the interested lay or community person.

J. P. GRAY.

Proceedings of the Eighth American Scientific Congress. Held in Washington, May 10-18, 1940. Under the Auspices of The Government of the United States of America. Volume VI. Public Health and Medicine. Department of State, Washington. 1942. 496 pages.

This paper-bound publication by the Department of State, Washington, 1942, of the proceedings of the Congress held in Washington in May, 1942, reports in abstract form and in complete form in several instances, papers relating to many phases of public health and medical practice in the Pan-American Republics. Section Five of the Congress is devoted to the field of public health and medicine and contributions relate to health education and sanitation; nutrition and dentistry; heart and blood diseases; communicable diseases, cancer; maternity and puericulture; psychiatry; miscellaneous. Context is in Spanish and English, an abstract in English usually accompanying the article in Spanish. Of particular interest to North American readers are articles on yellow fever; cancer; sulfonamides; onchocerciasis, brucellosis.

J. P. GRAY.

A Guide to Practical Nutrition. A Series of Articles on Nutrition, Sponsored by the Committee on Nutrition and Deficiency Diseases of The Philadelphia County Medical Society. Edited for the Committee by MICHAEL G. WOHL, M.D., and JOHN H. WILLARD, M.D. Introduction by MORRIS FISHBEIN, M.D., Editor of the *Journal of the American Medical Association.* Reprinted from Philadelphia Medicine, 1941-1942. 98 pages.

This is a series of articles on nutrition sponsored by the Committee on Nutrition and Deficiency Diseases of The Philadelphia County Medical Society. It was edited for the Committee by Michael G. Wohl, M.D., Temple University Hospital and Philadelphia General Hospital, and John H. Willard, M.D., Abingdon Memorial Hospital and Graduate Hospital of the University of Pennsylvania. A grant-in-aid from John Wyeth and Brother, Inc., Philadelphia, made it possible for the Society to publish the Guides and to distribute them as a service to the medical profession.

In the preface it is pointed out that education in nutrition must be supervised by medical authority. Most physicians appear to be so engrossed in diagnosis and treatment that they take little time to engage in public education. "So far at least as nutrition is concerned, the physician must become aware of his duties in the fostering of public health just as he is already aware of his duties in the fostering of private health." Pointing out that the future holds changes for the physician as for other men, the manual has been published in an effort to influence physicians to become better posted on the advances made in nutritional knowledge through biochemical researches and to take the lead in educating the public to the importance of proper nutrition as a means of improved health. Public opinion must be given more consideration by the medical profession if it is to maintain its place in a society becoming more and more complex. Dr. Fishbein writes in his introduction to the Guide, "Until adequate knowledge of deficiency diseases and scientific nutrition becomes the common property of all members of the medical profession, the utmost that can be realized in this field will not be accomplished." This statement is especially apropos right now since, in my opinion, the rank and file of physicians either lack the time or the inclination to keep abreast of this field, the most rapidly advancing one at present in all biochemistry. Consequently laymen have taken the lead in nutrition education with most physicians sitting back, wondering why, and oftentimes criticizing methods.

Eleven of the thirteen chapters are written by medical men so the point of view is decidedly practical. There is an appendix of twenty pages giving vitamin and mineral requirements, a vitamin chart, and tables of food composition. There is also a list of references and a cross index. Some of the references are old ones in such a rapidly advancing field. For example, the reference for essential amino acids is the Rose Harvey Lectures of 1934-1935. It is now questionable whether "ten amino acids are essential for human nutrition", histidine, for example. There is repetition throughout the manual but this is probably advantageous. The so-called "Yardstick of Nutrition" is listed five times, three times in one chapter! "Nutrition in the Older Individual" is well done and timely, geriatric nutrition having come to the fore in recent times. Diet in pregnancy and in childhood are discussed exceptionally well. There is a good chapter for dentists on "The Nutritional Aspect of Dental Diseases". The chapter on "The Vitamin B Complex" will be of interest since deficiencies of vitamins of this group are claimed to be the most commonly encountered clinically. Ariboflavinosis because of its reputedly high incidence, rates a chapter by itself. That deficiency states are not so simple is brought out by the statement: "A primary deficiency is one in which a deficient diet is the causative factor; a secondary deficiency is one associated with or perhaps caused by recognizable dysfunctions of the alimentary canal." Intestinal bacteria have caused vitamin investigators much trouble and will continue to do so for some time. Elvehjem has pointed out recently that abnormal intestinal flora may destroy some of the better known vitamins at a rate sufficiently rapid to produce nutritional deficiency in spite of the fact that the diet is adequate according to present standards. With such complexities concerned, certainly medical authority must take the lead in nutrition education. If this manual helps in bringing about this situation, its publication and distribution will have been eminently worth while.

SIDNEY S. NEGUS, PH.D.

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All correspondence regarding editorial matter, original articles, and policy should be directed to the Editor. Questions relating to subscription rates, advertising, etc., should be addressed to the Business Manager, 1200 East Clay Street, Richmond, Virginia. The MONTHLY is not responsible for the opinions and statements of its contributors. All advertisements are accepted subject to the approval of the Council on Pharmacy and Chemistry of the American Medical Association. Annual Subscription, $2.00. Single Copies 25c.

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More Doctors Needed for Armed Forces

WE presume that every doctor in the state of Virginia has read the article on page 1016 of the *Journal of the A.M.A.* for August 7, 1943. If any doctor has not done so, we trust he will do this at the earliest possible date. From this it will be seen that the War Manpower Commission now deems the military forces of the United States will have to have six thousand more physicians before January 1, 1944.

The Directing Board of the Procurement and Assignment Service has repeatedly stated that no one state will be allowed to compensate for the failure of another state to reach its quota. The following is a quotation from the above mentioned article: "The need is so positive that questions of essentiality of men in positions of teaching and research and in industrial medicine are likely to be rigidly reviewed in the near future with a view to extracting from civilian life every one that can be spared."

The various representatives of the Procurement and Assignment Service of Virginia are now going over their lists of doctors in each congressional district and seeing what can be done about allowing doctors to go to the military service, and at the same time, to protect the civilian needs. After a complete study of these different congressional districts, if, in the opinion of the Procurement and Assignment Service of Virginia, any doctor under forty-five years of age is considered available for military service and that doctor can be spared from the civilian community in which he practices, he will be notified and given an opportunity to apply for a commission. If he does not see fit to apply for a commission, his name, along with the recommendation of the Procurement and Assignment Service, will be turned over to his Local Selective Service Board.

The following is quoted from the above mentioned editorial: "Should it become necessary in the near future, as seems quite likely, to enlist new activity by the Selective Service Administration and the Officers' Procurement Service to bring in the six thousand physicians that are so certainly required, those recruited by that technic will

inevitably begin service with the minimum commission that is offered, namely that of first lieutenant. Until that technic is installed, the men of special competence and of years beyond those of the recent graduate have the assurance of careful consideration and a commission more nearly in accord with age and experience." Both the Headquarters Richmond Officer Procurement District, 614 Richmond Trust Building, Richmond, Virginia, and Office of Naval Officer Procurement, Fifth and Cary Streets, Richmond, Virginia, are assisting in this work now.

As Chairman of the Procurement and Assignment Service of Virginia for Doctors, this office is urging on every doctor under forty-five years of age to analyze carefully his own situation, and, if he would like to do so, discuss his situation with a local representative of the Procurement and Assignment Service. The physical requirements of both the Navy and the Army have been lowered during the past months; so some doctors who thought they were unfit for military service might now be accepted for commissions. It is now my own personal opinion that every doctor in the state of Virginia under forty-five years of age, who is physically fit, is going to find it extremely difficult to prove to the Selective Service System, without the aid of the Procurement and Assignment Service, that he is essential for civilian needs. In order that we might protect the civilian communities of this state, we are urging on every doctor in Virginia under forty-five years of age to contact the most convenient of the doctors listed below and talk over with him their problems relative to military service. Or, if they prefer, they can write directly to this office, but a talk with the local representative is usually more satisfactory. We realize that this has been done previously, but in order to bring our records of each individual doctor in the state of Virginia up to date, we are urging on you to do this at the earliest possible moment.

CONGRESSIONAL DISTRICT

1. Dr. G. W. Holland, Eastville
   Dr. Frank Pratt, Fredericksburg
   Dr. O. T. Amory, Newport News
2. Dr. Julian Rawls, Norfolk
   Dr. Joseph Collins, Portsmouth
3. Dr. J. Morrison Hutcheson, Richmond
4. Dr. James L. Hamner, Mannboro
   Dr. W. B. McIlwaine, Petersburg
   Dr. Ray A. Moore, Farmville
5. Dr. W. C. Akers, Stuart
   Dr. Julian M. Robinson, Danville
   Dr. E. M. Chitwood, Wytheville
   Dr. F. B. Teague, Martinsville

CONGRESSIONAL DISTRICT

6. Dr. W. L. Powell, Roanoke
   Dr. Bernard H. Kyle, Lynchburg
   Dr. J. M. Emmett, Clifton Firge
   Dr. A. M. Showalter, Christiansburg
   Dr. J. J. Giesen, Radford
7. Dr. Alex F. Robertson, Staunton
   Dr. O. H. McClung, Lexington
   Dr. Noland Canter, Harrisonburg
   Dr. Phil W. Boyd, Winchester
8. Dr. H. B. Mulholland, Charlottesville
   Dr. H. A. Latane, Alexandria
9. Dr. Claude B. Bowyer, Stonega
   Dr. H. W. Bachman, Bristol
   Dr. W. C. Caudill, Pearisburg
   Dr. D. S. Divers, Pulaski

HUGH H. TROUT, M.D.,
Chairman, Procurement and Assignment Service for Virginia.

Wartime Increases in Tuberculosis and Methods for Discovering New Cases

THE program of tuberculosis prevention and control in this country has for the past few years been seriously handicapped by the difficulty in locating a large number of cases sufficiently early to eliminate the spread of infection and effect cures through treatment. The Early Diagnosis Campaign promoted each spring by the National Tuberculosis Association represents an educational effort to encourage case finding

while patients are still in the early stages of the disease. The annual Campaign has resulted in numbers of case finding surveys among students, teachers, nurses, patients in mental hospitals, as well as industrial workers in various other special groups. In spite of all this activity aimed at the discovery and diagnosis, the minimal cases admitted to sanatoria have remained discouragingly small, and fall far below the established standards. The American Public Health Association in its appraisal of health activities believes that two new cases of tuberculosis should be discovered and reported per annual death.

Since the beginning of the war the situation has changed somewhat in that case finding has been undertaken on a larger scale than ever before visualized through the routine chest x-rays of Selectees. Reliable information indicates that the Armed Forces will examine nearly 11,000,000 by the end of 1943. All of these men will have been x-rayed except a few hundred thousand inducted into Service in the early days of the war before the routine procedure of x-raying all was adopted.

Before 11,000,000 can be accepted by the military and naval forces, it is estimated that between 16,000,000 and 17,000,000 will have to be examined. In addition to this mass survey work now going on at the Induction Centers throughout the country, the U. S. Public Health Service simultaneously is carrying on an intensive case finding campaign among employees of certain war plants, as well as groups in the various government departments. The U. S. Public Health Service estimates that approximately 2,000,000 of these war workers will have been x-rayed by the end of this year. This activity is supplemented by similar campaigns which are being conducted in many parts of the states and cities. At present we have no accurate means of estimating the number discovered by these two sources, but it is believed that between 45,000 and 50,000 cases with significant tuberculous lesions will be found. Competent diagnosticians judge that at least 25,000 of this group discovered will be in need of sanatorium care and treatment. Most of this number in ordinary times would not have been suspected as having tuberculosis because they are mostly asymptomatic, and only a small portion of them have a history of contact. As a result relatively few have been examined previously at chest clinics.

In certain areas where the public health program is well developed, studies have been made to determine what proportion of the rejected or deferred draft registrants with active tuberculosis were already known by the health authorities. These tests indicate between 10-15 per cent had been previously reported to health departments. Among the industrial employees group only about 5 per cent had previously been known by health officers. Since a special age group is involved, it is believed that the incidence of *significant tuberculosis* found by those examined for induction into the Armed Forces has been lower than the industrial group, because the latter has a wider range of ages and includes workers of both sexes.

With the discovery of so many new cases of tuberculosis through this mass survey program, it is realized more than ever the need for greater facilities of hospitalization for these cases. With more or less dependable information available it makes it possible for the first time in the history of the tuberculosis program to carry out a campaign on a definite scale than has ever heretofore been possible.

The National Tuberculosis Association a few years ago, in order to determine the proper hospital facilities for the care and treatment of tuberculosis felt that there should be two available beds for treatment for every death occurring from this disease. An analysis of the ratio of the number of beds to deaths on this basis was made in 1941, but it was found only fifteen States and the District of Columbia met this standard, while fifteen States failed to reach the level even of one available bed per annual

death. Fortunately, except for the shortage of beds for negroes, Virginia almost meets this requirement.

Now that case finding surveys are being made on a nationwide scale never before contemplated, it is obvious that facilities must be provided to care for those diagnosed cases in need of treatment which are now being found in earlier stages than was ever before possible. Therefore, a new standard has been established whereby it is advised that the ratio of three beds per annual death be established, thus raising the minimum standard, as previously adopted, from two to three beds per annual death. This new accepted method is to be exclusive of the beds provided to care for tuberculous inmates of mental and penal institutions, and also excludes the facilities made by Federal Hospitals for this purpose.

Some authorities argue that additional hospital facilities on a large scale will not be needed in view of the fact that the tuberculosis death rate in the country as a whole during the past decade has declined 35 per cent. We have no assurance, however, that this decline will continue; on the contrary it may be expected to increase.

The following information was taken from Statistical Data collected by Mary Dempsey of the National Tuberculosis Association:

DRAFTED MEN AND THOSE WHO TRIED TO ENLIST	
Total number expected to be in the Armed Forces by end of 1943	11,000,000
Estimated number of men called for examination	16,000,000
Estimated number given X-ray examinations before induction	12,000,000
At least 1 per cent deferred for tuberculous conditions, including active and arrested cases, those with calcifications, etc.	120,000
One-third of those deferred are classified as having lesions considered significant	40,000
One-half of the significant cases are classified as moderately advanced and far advanced, all of which need sanatorium care	20,000
One-fourth of the remainder of the significant cases, classified as minimal, are considered to be in need of sanatorium care	5,000
Total number cases found among recruits who are in need of sanatorium care	25,000
After checking a representative sample of these 25,000 cases to health department reports, 87 per cent were found to be unknown previously	21,750
CASE-FINDING AMONG INDUSTRIAL EMPLOYEES	
Total number to be given X-ray examinations by the end of 1943	2,000,000
One and one-half per cent will have been found to have tuberculosis	30,000
One-third of these 30,000 will have been classified as having active tuberculosis	10,000
Industrial workers with active tuberculosis who are considered to be in need of sanatorium care	6,000
After checking a representative sample of these 6,000 cases with health department reports, 95 per cent were found to be unknown	5,700
Total number of cases found to have significant lesions which need hospital care and which were previously unknown	27,450
Discounting this figure approximately 10 per cent, the accepted estimate in round numbers is	25,000

FRANK B. STAFFORD, M.D.

EDITOR'S NOTE—Dr. Stafford is first assistant physician at Blue Ridge Sanatorium, Charlottesville, Va.

The Care of Wives and Children of Enlisted Personnel of Armed Forces

THERE appears in the present issue of the MONTHLY the proposed plan for hospitalization and obstetric care of the wives and the medical care of the children of the enlisted personnel of the lower grades of the armed forces. This plan is supported by federal funds through the Children's Bureau and is to be administered by the Bureau of Maternal and Child Health of the State Health Department. It has been accepted by approximately forty of the states. Some of the states, notably Oregon, through

special committees tried to offer substitute plans for approval, but we are not aware that any of the substitute plans have been accepted or approved by the Children's Bureau. The plan seems to have some objectionable features as for example the principle of furnishing hospitalization and medical attention at government expense regardless of the financial ability of the family to take care of their own medical obligations. The fixed schedules of fees for obstetric and pediatric care has provoked some opposition. The Oregon substitute plan tried to eliminate the objectionable fixed fee schedule. The plan provides only for ward accommodations in the hospitals and the funds can not be used toward the payment of more elaborate hospital accommodations.

The Maternal Health Committee has supported a program for hospitalization of medically indigent obstetric patients from rural areas with abnormal conditions requiring hospital care. The plan for the obstetric care of wives of service men of the lower grades has no connection with the maternal and child hospitalization program, approved by the Maternal Health Committee. It is not felt that the plan for care of service men's families comes under the purview of the Maternal Health Committee, which is concerned only with the improvement of obstetric care for the mothers of Virginia to the end that the morbidity and mortality associated with pregnancy, parturition, and the puerperium may attain the desired irreducible minimum.

The proposed plan for the care of wives of service men was approved by the Council of the Medical Society of Virginia. Obviously the Council felt, and rightly so, that nothing would be gained by refusing to participate, particularly since some forty states had already approved and adopted the plan. Obviously the administration of the program will add another burden on the Bureau of Maternal and Child Health whose staff has already been appreciably curtailed by the war emergency. The program is not their idea and they had but little choice in the whole matter. One certainly hopes that it will not interfere with their efforts to protect the maternal health in the state of Virginia, in which in the past several years they have done a grand job.

The plan was no doubt conceived with the highest of patriotic motives and in a sense recognizes our immense obligations to the members in the lower grades of our armed forces. It is apparently an attempt to offer obstetric and pediatric care to the families of our sailors and soldiers, because of the inadequate facilities of the army and navy to take care of them—an obligation which the services have felt that they owed to the families of their members.

T. J. WILLIAMS, M.D., *Chairman,*
Maternal Health Committee,
Medical Society of Virginia.

S. 1161

DR. OSLER liked to talk about the migrations of Athena Medica. The fickle lady has had quite a journey since she left her native Cos before the Christian era—Alexandria, Arabia, Salerno, Padua, Paris, Leyden, Vienna, Edinburgh, London, Berlin. For the past three or four decades she has had her abode in these United States of America. How long this will continue may depend upon the action of the next Congress of the United States.

Supremacy in Medicine is in many ways like good poetry. Neither can be run by the clock nor subjected to time-and-a-half pay for over-time and holidays. Both are sensitive to outside interference and both thrive in an atmosphere of freedom. For neither, can the best environment be determined beforehand. No one can predict what the next great advancement in Medicine will be nor where it will occur. Of the two

Medicine is the more complicated and no two medical problems admit of the same solution.

Germany took the discovery of an Englishman, and, with its faith in Prussian obedience to iron law, wiped out small-pox from her boundaries. This country took the discovery of a German, and with the help of its social agencies, has greatly reduced the ravages of tuberculosis. A great Foundation has combined the knowledge of zoologists and sanitary engineers with diplomacy and conquered the hookwork. The same Foundation has taken the great discovery of the U. S. Army Medical Service and almost completely wiped yellow fever from the face of the earth. Typhoid fever has yielded to the combination of improved sewage disposal, control of water and milk supplies, and immunization. The pediatricians with their systematic vaccinations and their knowledge of nutrition are raising up a generation of super men and women. Who can foretell what effect the elimination of the diseases of childhood, that were wellnigh universal, will have upon the degenerative diseases that now head the mortality lists? The great discoveries in Medicine from Jenner and Koch to Sir Frederick Banting, almost without exception, have been made by private practitioners. Walter Reed might be considered an exception, for his experiments on the transmission of yellow fever were done in the Army. It was fortunate that the military Governor of Cuba was Gen. Leonard Wood, a medical man, who appreciated the possible value of the proposed experiments to the world at large. Beaumont also was an Army Surgeon, but he received no help or encouragement from the Surgeon General.

The curious thing about doctors, and it seems not to be understood by the public, is, that they strive hard to work themselves out of a job. There is less disease now than ever in the history of the world. The average duration of life has increased from 32 to 62 years. The American people are the healthiest people in the world. American Medicine has accomplished, and is accomplishing, wonders. No one questions this. The question that has been raised is whether it is doing all that it should. Its benefits are said to be available in full measure only to the rich and the poor. Various schemes and plans have been advocated for more evenly distributing medical service. The Wagner Bill contains the most colossal proposal yet advanced. It proposes to control the medical affairs of some one hundred and twenty-five million people. Can it be done without lowering the standard of American Medicine? That is the question. State Medicine is not new. It has been in operation in Germany since before that country lost its prestige in Medicine. It has been tried in England on a smaller scale. Reports from England have been conflicting. Certainly at first, panel Medicine was looked down upon by both the profession and the public. It has been tried in Russia and there it seems to have filled a real need. The distances, especially in Siberia, are so great, the population so scattered, and the doctors so few that it was necessary to have some plan for supplying the people with medical care.

The plan as set forth in Senate Bill 1161 is indeed an heroic measure. It is very much like treating a cold with sulfanilamide. The chance of killing the patient far outweighs the benefit to be expected. Heroic measures in Medicine are first subjected to animal experimentation and then are tried out cautiously, clinically. A number of localities, notably Utica and Buffalo, N. Y., Michigan, California, Massachusetts, New Jersey, Pennsylvania and North Carolina, are trying out various plans. Costly mistakes have already been made but not disastrous ones. With accumulating experience the plans are improving, and are being made to fit local conditions, urban and rural. A plan that suits one locality may not fit the needs of another group. With time it is conceivable that these plans will spread out and cover the entire country, and no harm will be done to medical standards.

Societies

The Augusta County Medical Association,

At its annual meeting early in August, elected the following officers for the ensuing year: President, Dr. A. M. McLaughlin of Waynesboro; vice-presidents, Dr. John Guss of Staunton, Dr. J. H. Thomas of Greenville, and Dr. Kenneth Bradford of Staunton; secretary, Dr. George Kinser of Waynesboro; and treasurer, Dr. J. E. Womack (re-elected) of Staunton. Delegates were also elected to the annual meeting of the Medical Society of Virginia.

The Mid-Tidewater Medical Society

Held its regular quarterly meeting at Urbanna on July 27th, with the president, Dr. H. A. Tabb of Gloucester in the chair. Dr. M. H. Harris of West Point is secretary. Delegates were elected to the State Society meeting in Roanoke. The program consisted of an open forum on "Cause and Treatment of Diarrheas and Dysentery", the discussion being led by Drs. J. M. Hutcheson and O. L. Hite of Richmond. Dr. E. T. Trice, chief of the medical section of the Selective Service for Virginia was also present and brought the greetings and thanks of Governor Darden to the doctors for their work and cooperation for the Selective Service during the past three years.

Members and guests enjoyed a luncheon at the hotel and voted to hold the Fall meeting at Millers Tavern.

Rockingham County Medical Society.

At a meeting of this Society held on August the 9th, the delegate and alternate delegate to the State Society meeting in Roanoke were named, and the following elected officers for the coming year: President, Dr. H. G. Preston of Harrisonburg; vice-president, Dr. A. L. Hammer of McGaheysville; and secretary-treasurer, Dr. Thomas Scarlett (re-elected) of Harrisonburg.

News

The Roanoke Meeting.

The Medical Profession of Roanoke and the City of Roanoke are again looking forward with pleasure to entertaining the coming meeting of the State Society, which meeting will take place October 25-27.

Since the meeting is scheduled for a somewhat later date than that of last year, climatic conditions should be ideal. The atmosphere should be crisp but not too cool; the coloring of the mountain foliage should be at its best; but regardless of all these things, rain or shine, air-conditioned Hotel Roanoke awaits what it is hoped will be an excellent meeting.

While the members of the Medical Profession in the armed forces are doing their job with enthusiasm, those who are forced to remain in civil life have a no less exacting task and have upon them also the obligation to keep abreast of the advances in medicine.

As to transportation, there is good reason to hope that the efforts at present being made will result in relaxation of gasoline restrictions, so that those who look forward to driving may not be disappointed but, failing in this, a reminder that Roanoke is served by railroads from all sections of the state may not be amiss.

Business sessions will be held Monday morning and the Scientific sessions will open that afternoon.

The papers will be of the usual high standard and there will be no sectional meetings. The Monday evening session, at which time the president, Dr. J. M. Emmett, will give his address, will be open to the public. There will be three guest speakers from the medical department of the armed forces and they will speak on subjects covering their experiences in foreign service. The preliminary program appears in this issue of the MONTHLY.

The membership will be interested to know that there will be a few scientific exhibits and that the usual commercial exhibitors will be on hand, all available space having been contracted for some time since.

In the way of entertainment, the committee has been

busy and reports that there will be a cocktail party on Tuesday evening followed by a dinner at which there will be a humorous speaker. For the ladies, a luncheon is being planned on Tuesday and arrangements for the meeting of the Auxiliary on Tuesday afternoon.

A list of Roanoke hotels, with rates, was published in the June MONTHLY. It is suggested that reservations be made promptly as possible.

News of Medical Men in Service.

Lt. Richard Bland Williams, M.C., U. S. Navy, who was stationed at Guam when it fell to the Japanese, is reported as a prisoner of war in the Zentsuji war prison camp on Skikoku Island. Lt. Williams' home is Norfolk and he graduated from the University of Virginia in 1939.

Dr. Wm. R. Jones, Jr., Richmond, has been promoted to Captain M.C., U.S.A. He is stationed in the Pacific area.

Dr. Edmund LaPrade of Richmond has recently been promoted to the rank of Captain in the Medical Corps, U. S. Army.

Capt. William O. Porter, M.C., of Roanoke, is serving as chief of the X-Ray Department with the 60th Station Hospital in North Africa.

State Health Department Personnel Changes.

Dr. William Y. Garrett, who has for sometime been health officer of Northampton County with headquarters at Eastville, has been appointed health officer of Newport News, and entered upon his duties there on September 1.

Dr. J. Walter Jackson of Machipongo accepted the position of acting health officer of Northampton County, effective this date.

South Boston Hospital Facilities to Be Merged.

The South Boston Hospital, with its entire equipment, owned and operated by the late Dr. R. H. Fuller, has been purchased by Dr. I. K. Briggs and T. C. Watkins, Jr., acting for his son, Capt. William R. Watkins, M.C., now on overseas duty with armed forces. The hospital will be taken over in the near future and its active personnel will consist of Dr. Briggs as surgeon; Dr. W. C. Brann obstetrician; Dr. John A. Owen anesthetist; and a full staff of hospital assistants, nurses, etc. As soon as possible after the South Boston Hospital has been taken over under the new management, Dr. Briggs will close the Halcyon Hospital, transferring its modern equipment to the South Boston Hospital, which will have forty-five beds and will be one of the most completely equipped and up-to-date hospitals of its size in the State, and open to the doctors in that section.

Married.

Dr. Spotswood Robins of Richmond and Miss Sarah Emma Hutcherson of Reidsville, N. C., July 28th.

Dr. Edwin Burwell Jones Whitmore, Jr., of Petersburg, and Miss Claudine Price Burkholder of Richmond, July 31st. Dr. Whitmore is a member of the class of '38 of the University of Virginia, Department of Medicine, and is now on the staff of the Petersburg State Colony.

Dr. M. Benmosche and Mrs. Gladys Goodman of New York City, the middle of August. Dr. Benmosche is a member of the Medical Society of Virginia, and an ex-president of the Medical College of Virginia Alumni Association in New York City.

Dr. Arnold Resigns from Colony Post.

Dr. G. B. Arnold, who has been connected with the staff of the State Colony since 1929 and its superintendent since 1933, has tendered his resignation, effective October 1. He plans to enter private practice in Lynchburg.

Members of Roanoke Board of Health.

Dr. Elbyrne G. Gill and Dr. W. R. Whitman have been re-appointed members of the Board of Health for the city of Roanoke for a term of two years. Dr. Gill is chairman and Dr. Whitman vice-chairman of the Board.

Appointed to State Board of Health.

Dr. J. A. Abercrombie of Richlands has been appointed by Governor Darden as a member of the State Board of Health, to fill the unexpired term of Dr. W. R. Williams, deceased, of Richlands. The term ends in June 1947.

The Fourth District and Southside Virginia Medical Society

Will hold its regular meeting at Southside Community Hospital, Farmville, on Tuesday, September the 28th, at 2:30 P. M. Dr. B. H. Knight of Surry is president, Dr. C. E. Martin of Emporia secre-

tary, and Dr. Wright Clarkson of Petersburg chairman of the Steering Committee.

The program includes the following papers:

Traumatic Lesions of the Abdomen by Dr. Carrington Williams of Richmond.

Immunization against Diseases of Today by Dr. W. Ambrose McGee of Richmond.

Sterility by Dr. William Bickers of Richmond.

Recognition and Management of Ruptured Ectopic Pregnancy by Dr. Thomas G. Hardy of Farmville.

Abdominal Operations by Dr. George H. Reese of Petersburg.

Supper at the hospital will follow the program. As this is the annual meeting, election of officers will be held at a business session.

New Hospital Named for Dr. McGuire.

Dr. Hunter Holmes McGuire, personal surgeon to Stonewall Jackson and for many years prominent surgeon of Richmond, has been honored in the naming of the new army general hospital now under construction just outside Richmond. He served as medical director of the Second Army Corps in the Confederate Army.

Assistant to Dr. Rucker.

Dr. Gwen S. Hudson, class of '37, University of Toronto Medical School, after several years of specializing in obstetrics, has entered private practice as assistant to Dr. M. P. Rucker, with offices in Medical Arts Building, Richmond. Dr. Hudson came to Richmond in July 1940 and was first at St. Luke's Hospital, but has spent the past two years in obstetrical work at the Medical College of Virginia Hospital.

Connected With Raiford Hospital.

Dr. Joseph D. Hough is now a member of the staff and head of the department of internal medicine at Raiford Memorial Hospital, Franklin. Dr. Hough was at Duke University from 1937 to 1941, where he was connected with the department of internal medicine and was resident in the diagnostic clinic. From that time until he located in Franklin he was an assistant instructor in New York University Hospital.

Film on Continuous Caudal Analgesia in Obstetrics.

Eli Lilly and Company, Indianapolis, announces the release of a 16-mm. silent motion picture in color on the subject, "Continuous Caudal Analgesia in Obstetrics". The film is available to physicians for showing before medical societies and hospital staffs. It deals with the history, anatomy, and physiology of caudal analgesia and demonstrates the technic of use in obstetrics.

The film was made at the U. S. Marine Hospital, Staten Island, New York, by authorization of the Surgeon General, U. S. Public Health Service, and the demonstrations were carried out by the originators of the technic, Dr. Robert A. Hingson and Dr. Waldo B. Edwards.

Army Hospital Named for Dr. McCaw.

An army general hospital in Walla Walla, Wash., has been named in honor of a former Richmonder, the late Brigadier General Walter Drew McCaw, who graduated from the Medical College of Virginia in 1882 and two years later entered the service of the United States army. General McCaw saw active service in many parts of the world and was also for sometime in charge of the library of the Surgeon General's office in Washington. He was a son of the late Dr. James B. McCaw who was director of Chimborazo Hospital, Richmond, in the war between the states.

Mississippi Valley Medical Society.

A splendid program has been arranged for the Ninth Annual Meeting of the Mississippi Valley Medical Society at Quincy, Ill., September 29-30. Over 20 leading clinician-teachers will put on the usual intensive program that has always featured this—"The Mid-West's Greatest Intensive Post-Graduate Assembly for General Practitioners." This will be practical and will be keyed to war-time medicine. All ethical physicians are invited to attend. Medical officers of the army and navy are cordially invited to be guests of the society if they register in service uniform.

A detailed program of the meeting may be obtained from the Secretary, Harold Swanberg, M.D., 209-224 W. C. U. Building, Quincy, Illinois.

Appointments on West Virginia Public Health Council.

The Governor of West Virginia has reappointed the following as members of the Public Health Council of that State for a term of four years, effective July 1, 1943: Dr. W. R. Goff of Parkersburg, Dr. W. P. Bittinger of Summerlee, and Dr. Walter E. Vest of Huntington.

The Governor also appointed Dr. J. E. Offner of Weston as State Health Commissioner, his term of office expiring May 31, 1947.

Our Zone Number Is 19.

The delivery of mail intended for the Medical Society of Virginia or the Virginia Medical Monthly may be expedited if our zone number is included. Mail should be addressed 1200 East Clay Street, Richmond 19, Virginia.

Dr. Walter B. Cannon,

President of the American-Soviet Medical Society, was formally inducted as a member of the Academy of Sciences of the U.S.S.R. at a reception given in his honor by the Soviet Embassy on August 12th. Dr. Cannon, who is professor emeritus of physiology at Harvard, is the first American to be a member of both the Academy of Sciences of the United States and that of the U.S.S.R. The American-Soviet Medical Society which Dr. Cannon now heads has been organized to stimulate the exchange of medical information between this country and the Soviet Union, and Dr. Cannon has done much to encourage this exchange. Its national headquarters are at 130 West 46 Street in New York City. The American Review of Soviet Medicine, its publication, maintains editorial offices at 1900 East Monument Street in Baltimore.

Eye Health and Safety News

Is a bi-monthly newsletter, published by The National Society for the Prevention of Blindness, for free distribution among physicians, nurses, public health officials, social workers, educators, safety engineers, and others who are professionally interested in some aspect of sight conservation. Each issue contains a variety of brief items on developments and new projects in the campaign for prevention of blindness. A regular feature is the reporting of activities in this field carried on by official and voluntary state agencies.

Those interested in receiving this new publication regularly are invited to write to the Society, 1790 Broadway, New York (19), N. Y.

The Mississippi Valley Medical Editors' Association

Has cancelled the 1943 meeting (which was to have been held at Quincy, Ill., on September 20) and no further meetings will be held for the duration. The present officers will be in charge for the first post-war meeting. Further details may be obtained from the President, Dr. James Dunn, 1002 Davenport Bank Bldg., Davenport, Iowa, or the Secretary, Dr. Harold Swanberg, 209-224 W. C. U. Bldg., Quincy, Ill.

Dr. Joseph Bernstein,

Formerly of Arlington, is now located in Washington, with offices at 3217 Connecticut Avenue, Northwest. He served with the armed forces from May 1941 until June 1942, after which he was on the staff of the Worcester (Mass.) State Hospital, until June of this year.

Dr. William L. Davis,

Class of '40, University of Virginia Medical School, has located at Shelton Place in Princess Anne County where he is engaged in general practice. Upon leaving the University, Dr. Davis served a rotating internship at the Charleston, W. Va., General Hospital.

Dr. Haden on University Board.

Dr. William D. Haden of Charlottesville has been appointed by Governor Darden to the board of visitors of the University of Virginia to fill the unexpired term of the late Hollis Rinehart of that city.

Army Hospital Dedicated.

The Woodrow Wilson General Army Hospital, located near Staunton, is being officially dedicated on September the 1st, with interesting exercises and the presence of a number of distinguished guests. The program includes the presentation of the hospital by General Somervell to Major General Norman T. Kirk, M.C., Surgeon General of the U. S. Army, who will officially accept it and in turn present it to Colonel Sidney L. Chappell, M.C., commanding officer.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Abbott, G. K. and others—Physical therapy for nursing.
Adler, Alfred—Understanding human nature.
Anastasi, Anne—Differential psychology.
A.R.N.M.D.—Nutritional deficiency in nervous and mental diseases.
Baker, John R.—The scientific life.
Bauer, J.—Constitution and disease.
Beebe, G. W.—Contraception and fertility in Southern Appalachians.

Bennett, G. A. & others—Changes in the knee-joint at various ages with particular reference to the nature and development of degenerative joint disease.
Bernheim, B. N.—Adventures in blood transfusion.
Bicknell, E. P.—Pioneering with the Red Cross.
Bogert—Criteria for vertebrate subspecies, species and genera.
Chadwick and Pope—The modern attack on tuberculosis.
Council on Dental Therapeutics—Accepted Dental Remedies.
Craig, C. F.—Laboratory diagnosis of Protozoa and Protozoa diseases.
Curie, M. S.—Pierre Curie, tr. by C. & V. Kellogg.
Dallavalle, J. M.—Micromeritics—the technology of fine particles.
Darlington & Appleton—Introduction to medical sciences.
Dimnet, E.—Art of thinking.
Dodge, R. & Kahn, E.—Craving for superiority.
Doherty, Wm. B. & Runes, D. D.—Rehabilitation of the war injured.
Dorsey, J. M.—Foundations of human nature.
Douglas, O. B. & Holland, B. F.—Fundamentals of educational psychology.
Dry, T. J.—Manual of cardiology.
Eisenchiml, Otto—Without fame.
Gemmill, C. L.—Physiology in aviation.
Gibbs, F. A. & Gibbs, E. L.—Atlas of electroenophalography.
Goldman, H. M.—Periodontia, a study of the histology, physiology and pathology of the peridontium and the treatment of its diseases.
Grabbe, P. & Murphy, G.—We call it human nature.
Grant—Atlas of anatomy. Vol. 1.
Greulich, W. W. & others—Somatic and endocrine studies of puberal and adolescent boys.
Ham, A. W.—Doctors in the making: The art of being a medical student.
Hamburger, V.—Manual of experimental embryology.
Hamilton—Exploring the dangerous trades.
Harris, R. C. & Thiman, K. V., ed.—Vitamins and hormones.
Hartman, G. W.—Gestalt psychologies.
Hawley & Mauer-Mast—Fundamentals of nutrition.
Heidbreder, E. F.—Seven psychologies.
Holt, Rackham—George Washington Carver.
Horney, Karen—Neurotic personality of our time.
Hrdlicka, Ales—Catalogue of human crania in the U. S.
Huddleson—Brucellosis in man and animals.
Jackson, J. A.—Guiding your life; with psychology as a key.
Jellinek, E. M.—Effects of alcohol on the individual.
Johnston, P. W.—The relation of certain anomalies of vision and lateral dominance to reading disability.
Judd, C. H.—Educational psychology.
Klinefelter, L. M.—Medical occupations for girls.
Kovacs, R. ed.—Yearbook of physical therapy, 1941.
Lederer, F. L.—Diseases of the ear, nose and throat.
Linn, J. W.—Jane Addams; a biography.
McCormack—Metabolic cost of maintaining standing position.
McGraw, M.—The neuromuscular maturation of the human infant.
Manson-Bahr—Synopsis of tropical medicine.
Maxson, L. H.—Spinal anesthesia.
Mellon, R. R. & Others—Sulfanilamide therapy of bacterial infections.
Muller—Clinical significance of the blood in tuberculosis.
Meyerson, Abraham—Foundations of personality.
Nelson, K. L. J.—Massage in nursing care.
Neuhof and Jemerin—Acute infections of the mediastinum.
O'Hara—Air-borne infection: Some observation on its decline.
Oman, C. M.—Doctors aweigh!
Papanicolaou, G. N.—Diagnosis of uterine cancer by the vaginal smear.

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Obituaries

Dr. Thomas Demoval Armistead,

Roanoke, died on August the 7th, in the seventieth year of his age. After his graduation from the Medical College of Virginia in 1898, he located in Roanoke, and was a former city physician and coroner. He was largely instrumental in securing for the city a health officer, and was a participant in the drive for the Roanoke Hospital and clinic and

for the Burrell Memorial Hospital for colored citizens. Dr. Armistead had been a member of the Medical Society of Virginia since 1902 and was a fellow of the American College of Surgeons. He was also active in church work. His widow and several children survive him.

At a called meeting of the Roanoke Academy of Medicine August 7, 1943, the following resolution was adopted:

The Roanoke Academy of Medicine hears with deep regret the departure of Dr. Tom Armistead, and wishes to extend their sincere sympathy to his bereaved family, and to express to them our sincere appreciation of Dr. Armistead as a fellow practitioner and citizen of our city.

To say that he was loved and esteemed by all who knew him expresses, as near as words can, his position in our city.

It is resolved that a copy of this be sent to his family, to the local paper, and the Virginia State Medical Society.

Signed:

Committee

PAUL DAVIS
W. L. POWELL
G. M. MAXWELL.

Dr. Rawley Harrison Fuller,

South Boston, died July 23rd as the result of a stroke suffered the previous day. He was a native of Pittsylvania County and sixty-four years of age. Dr. Fuller graduated in medicine from the former University College of Medicine, Richmond in 1905, and joined the Medical Society of Virginia that year. He was a member also of a number of other medical organizations, of the South Boston Lion Club, and the South Boston Masonic Lodge, and had been for a number of years a surgeon for the Southern Railway. He was the owner of the South Boston Hospital, which he opened in that city in 1927. Dr. Fuller is survived by his wife and four children.

Dr. John Blair Fitts,

Richmond, assistant professor of orthopedic surgery at the Medical College of Virginia, died August the 19th after an illness of sometime. He was born in Blacksburg fifty-three years ago and studied medicine at the Medical College of Virginia, graduating in 1914. Following this he took up special work in several northern hospitals. He served through World War I, being connected with an orthopedic hospital in France. He was a member of the Medical Society of Virginia and a number of other medical and special organizations. His wife and four children survive him.

Dr. Ralph Waddell Brown,

Retired physician of Roanoke, died August the 9th, having been in ill health since his retirement from active practice in 1936. He was a native of South Carolina and seventy-six years of age. Dr. Brown graduated from the university of the City of New York in 1889 and located for practice in Roanoke in 1893. He was a past president of the Roanoke Academy of Medicine and active in civic and church affairs. He served in the World War as captain in the medical corps and was a member of the American Legion Post No. 3. He had been a member of the Medical Society of Virginia for forty years. Dr. Brown is survived by his wife and several children.

Dr. W. Brownley Foster,

Associate public health physician for the State Health Department, and former director of Public Welfare for the city of Richmond, died suddenly on August the 10th, having been stricken while on the street. He was a native of Richmond, sixty-five years of age, and a graduate from the Medical College of Virginia in 1901. Prior to his health work in Richmond, Dr. Foster organized a city health department in Roanoke and was its head for fourteen years. While there, he was also a president of the Roanoke Academy of Medicine. Upon returning to Richmond to head its Welfare Department, he took an active part in all its civic work and was in addition a Shriner and Kiwanian. His wife and two daughters survive him.

Dr. Arthur Thomas McCormack,

Louisville, State Health Commissioner of Kentucky and Secretary of the Kentucky State Medical Association, died of an acute heart attack on August 7th. He was President of the Southern Medical Association 1939-1940 and at the time of his death was a member of its Board of Trustees. He has been honored by many medical and lay organizations.

Dr. J. N. McCormack organized the state health work in Kentucky sixty-four years ago and he and his son, Dr. Arthur, have been continuously in charge of the State Health Department of Kentucky for those sixty-four years. His wife and a daughter survive him.

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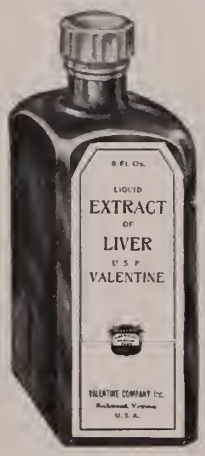

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VIRGINIA MEDICAL MONTHLY

Official Publication of the Medical Society of Virginia

October, 1943

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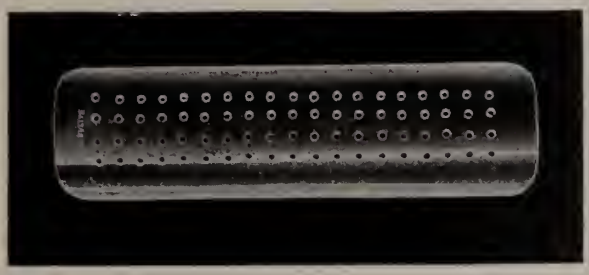

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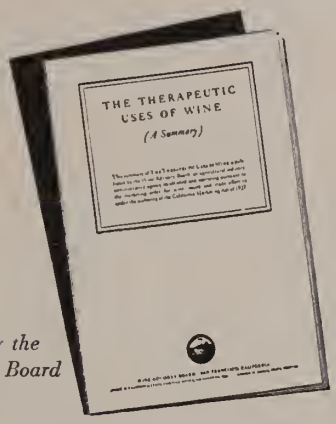

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This review results from a study supported by the Wine Advisory Board, an agricultural industry administrative agency established under the California Marketing Act, and has been sponsored by the Society of Medical Friends of Wine.

Members of the medical profession are invited to write for this monograph. Requests should be made to the Wine Advisory Board, 85 Second Street, San Francisco.

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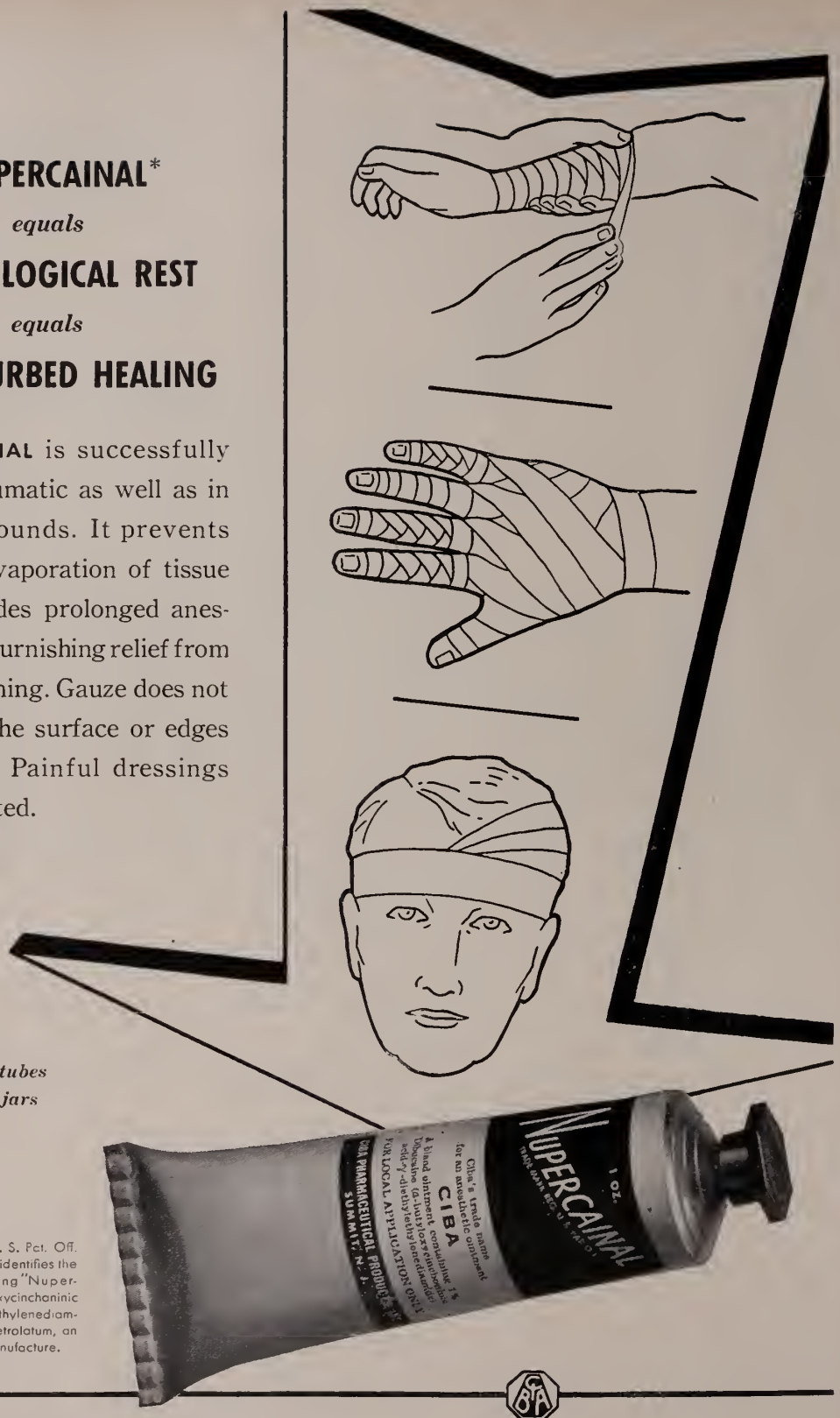

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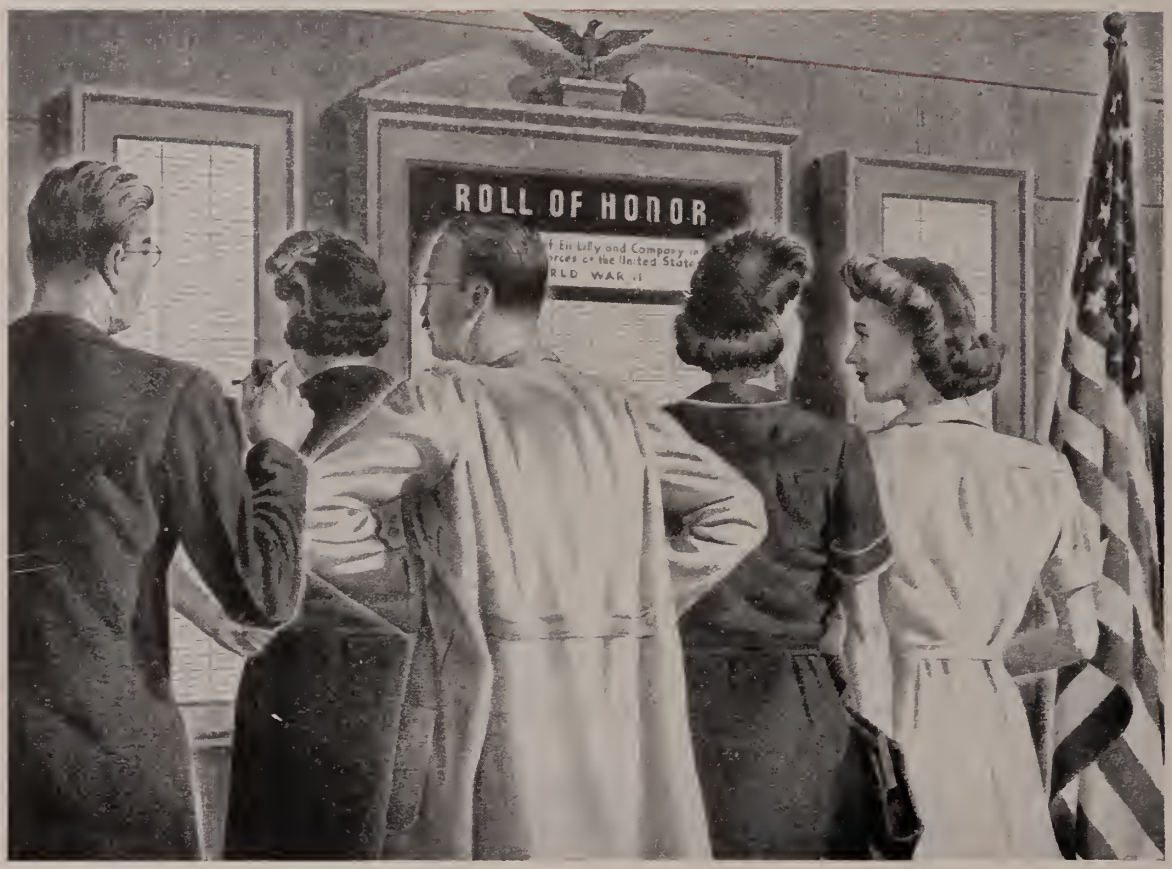

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Vol. 70, No. 10
WHOLE No. 1096.

RICHMOND, VA., OCTOBER, 1943.

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Guest Editorial

A Plague on Chauvinism!

I HAVE never set foot in Virginia. That is my loss. But I have twice reached the borders of that land, and during visits to the U.S.A. I have made contacts with Virginians whom I am proud to count my friends. I therefore feel that I have some inkling of the Virginian mode of life, and warm to its call. For these, and for another reason, it is a peculiar privilege and pleasure to be asked by your Editor to contribute to this, one of the oldest of the American scientific journals.

The other reason is my interest in James Marion Sims. That great man's achievements, which had the effect of establishing gynaecology as a surgical speciality, can scarcely be overstated. His astonishing success was gained in the face of bitter adversity; and although handicapped by poor training, by financial difficulties, and by dire ill-health, his vision and pertinacity of purpose were such that he triumphed over an opposition that would surely have destroyed the spirit of any but this one Southern lad. It is fitting to recall that this is now the hundredth year since Sims created that strangest of all hospitals where seven negro women, each heavily maimed by birth-injury, lived for months and for years, and suffered themselves to be operated on time and time again; where the one woman assisted at the operation on another, because no reputable medical man would lend aid to such supposedly useless and dangerous work. And all these women, and hundreds more besides, were cured, and were restored to normal life. True, others before Sims had, on a smaller scale, achieved success in the closure of the vesico-vaginal fistula; in particular your Editor has drawn attention to the Virginian, John Peter Mettauer, who should clearly have a much greater place accorded to him in medical history. But these fore-runners did not obviously influence the course of surgical development, while Sims, by contrast, virtually created a new branch of surgery, and present-day gynaecologists, whether they know it or not, are offshoots of his dynasty.

Sims's story and Sims's teaching are better known on your side of the Atlantic than on mine, and speaking now in a more personal vein, I doubt if I should fully appreciate the work of that Master had I not been able (helped by a generous Rockefeller Fellowship) to study and to work in American clinics. Thus armed and thus stimulated, I have since made this branch of surgery one of my particular interests. It has been said that as a man walking on ice can hardly make a forward step without also suffering some backward slip, so in medical science each advance is almost inevitably followed by a regrettable loss of some previous knowledge. Nowhere is this truth better seen than in the treatment of the vesico-vaginal fistula. Many of the modern

changes in technique represent—so I believe—losses as well as gains, and in my own work I gladly attribute success to many of the old teachings of Sims, and of his pupil Thomas Addis Emmet. Many years ago Sims contributed to this very Journal. May I now, a century later, a guest in these same columns, pay homage to that great man!

Such thoughts lead to more general topics. Would that a free interchange of personnel were always possible between clinic and clinic, and country and country! Benefit would be reaped not by individuals only, but by the whole of medical science, for it is the exchange of ideas that begets new ideas; it is the mating of knowledge that stimulates research and brings forth new knowledge. Every man who intends to devote himself to a special branch of work should regard travel as a necessity and a duty. Yet there are provisos. Visits to new centres should not be made at an over early stage when, for lack of previous personal experience, the embryo specialist is not yet ready to perceive or to appraise new methods. Nor must they be made too late, because most minds are impressionable for but a short time, and all too soon they set in unalterable shape. And it is also true that some minds are never capable of reacting favourably to new experiences. I once saw letters written by a doctor visiting foreign clinics; they were all in this strain: "Yesterday I visited the —— Hospital. It is a wonderful place. The men are doing splendid work. The methods are exactly those in use at my old teaching hospital. I felt myself quite at home again, and was sorry when the time came to leave. But today I have seen the —— Hospital. What a miserable place! The methods are deplorable. They are all quite different from those in use at my old hospital. I am thoroughly disgusted, and shall be glad when tomorrow comes and I can leave". These letters revealed a peculiar mentality; it would have been better had the writer stayed at home and not wasted his time on travel. But evidence such as this is a valuable reminder that some people can never seize a new idea, although to them may be given the ability to reproduce in full vigour or improved form the teachings and methods of their own early teachers.

At this time we have amongst us great numbers of your finest men. We are truly glad to see them, and regret only that so many are seeing this country when life is disorganized and when hospitality cannot be given as deserved. We are now, in a wider sense, exchanging these new ideas which must necessarily lead to better relations and better progress in time to come. But again the variation of reaction to strange surroundings is seen. While the majority of the men quickly appreciate and enter with zest into the new forms of life and custom, there is, as exemplified in the special case already mentioned, the odd individual to whom nothing is right if it is not in accord with previous experience. The pharmaceutical chemist does not run a "drugstore" to purvey refreshment; he is therefore foolish and unenterprising. The traffic keeps to the "wrong" side of the road; that shows the perversity of the people. The speech is strange and the meaning of many words is different; these are deliberate and maddening affectations.

I am no psychologist, but I guess that the non-receptive mind is essentially a lazy mind; rather than trouble to grasp new ideas, it recoils, and, like the fox that found the grapes were out of reach, excuses itself by saying "well they are sour anyhow!" This mentality causes much of the trouble in this world. All of us, whether we realise it or not, have some inward feeling—be it ever so small—of superiority in this or that respect. We should be sorry individuals were this not so! But the I-am-better-than-the-other-man feeling easily gets out of hand. The owner of such a mind too easily believes that his town is necessarily better than every other town, that his State is necessarily better than every other State, that his Country is necessarily better

than every other Country. The lazy habit of mind soon asserts itself, and rather than try to understand the actions of the other man, or State, or Country, he condemns these actions out of hand; what is not understood is at once attributed to the lowest and meanest motives. And what a mess all this reasoning—or lack of reasoning—has landed us in! Surely nothing can counter these harmful mental trends better than travel, and the free interchange of ideas. The false feeling of superiority engendered by lack of knowledge—Chauvinism as it has been called—has been discussed and castigated by William Osler in his famous essay of that name. Beware of Chauvinism and Chauvinists!

Mention of Osler brings a final thought. The surgeon or physician differs from the pure scientist in necessarily using his personality to help in the accomplishment of his daily work. Osler, for example, contributed remarkably little that was new to medical knowledge, yet he was undoubtedly one of the outstanding physicians of modern times, and by his personality, knowledge and understanding of men he greatly influenced for good the trend of medical practice. Personality has roots deep in heritage and in up-bringing. And when we remember names such as Mettauer, McDowell, Sims, and Emmet, it is right to acknowledge also the Southern heritage which led these men to success. For them words of Sir J. M. Barrie, made in a somewhat different connection on the occasion of his Rectorial Address to St. Andrews University, might well be adapted:

"Mighty are the Universities of Scotland and they will prevail, but even in your highest exaltations never forget that there are not four but five. The greatest of them is the poor proud homes you come out of, which said so long ago 'there shall be education in this land'. She, not St. Andrews, is the oldest University in Scotland and all the others are her whelps".

J. CHASSAR MOIR, M.D.

EDITOR'S NOTE: Professor Moir is the Director of The Nuffield Department of Obstetrics and Gynaecology of the Radcliffe Infirmary, Oxford, England.

Medical Society of Virginia

Annual Meeting

Date: October 25, 26, and 27

Place: Roanoke

Headquarters: Hotel Roanoke

THE TREATMENT OF PNEUMONIA AND ITS COMPLICATIONS*

JAMES H. SMITH, M.D.,
Richmond, Virginia.

So far, the year nineteen forty-three has been a good year in the matter of pneumonia mortality, though it has been difficult for clinicians who like to keep their ideas arranged in neat compartments. Hardly had we arrived at a position where we felt ourselves better equipped for therapy, when there appeared a new pneumonia against which our newly acquired drug will not work. Fortunately that is not a very serious failure, for, whereas pneumococcic pneumonia is a mankiller, the reputation of virus pneumonia is not formidable. Even so, morbidity from this cause recently has been very considerable, and there is no assurance that it will keep its virgin innocence of complications.

So long as we were forced to treat all pneumonias merely by supportive and symptomatic measures, they were usually classified on a morphologic basis. With the introduction of therapeutic agents of a specific character it has become important to think in terms of etiology. The following classification will bring out the chief distinctions in the treatment of pneumonia:

CLASSIFICATION OF PNEUMONIAS

1. Pneumococcic pneumonia
2. Bacterial invasion of depleted lung tissue
3. Streptococcic and staphylococcic complications of
   (a) Measles
   (b) Influenza
4. Pneumonia caused by Friedlander's bacillus, B. typhosus, B. tularense, etc.
5. Virus pneumonia.

There are those who object to the name virus pneumonia for the newly described disease represented in the fifth heading. They take the substantial ground that a virus has not been fully established as the cause. They prefer the name atypical primary pneumonia. Atypical presupposes a type, in this case presumably lobar pneumonia. But everyone knows how frequently lobar or pneumococcic pneumonia is itself atypical. And, again, what does the word primary mean? If it means a primary or uncomplicated etiologic agent as distinguished from a secondary invader, it should be recalled that the objection to the name virus pneumonia is that the etiology is unproved. On the other hand, if primary means coming out of a clear sky and unrelated to other illness, it may be recalled that this disease is insidious in onset, with prodromal symptoms like influenza. In an epidemic reported by Reimann and Havens, out of 407 who had the infection only 100 were ill enough to be admitted to the hospital, and of these only 25 developed pneumonia. Altogether, for those who object to "virus pneumonia", some term such as infectious non-bacterial pneumonia would seem to be as safe and less confusing than "atypical primary pneumonia". This is not intended to be quibbling. Later, reference will be made to a case, described by the roentgenologist as atypical, and cured by specific anti-pneumococcic serum.

1. In the treatment of pneumococcic pneumonia, after a confused and feeble start serum therapy was developed. This was based upon the recognition of some thirty-three types of pneumococcus, for each of which a serum was developed from one animal or another, until there were made available on the market a specific serum for each type, each supposed to be useful, though some are more effectual than others. The results were undoubtedly better than those obtained with symptomatic treatment, and in the enthusiasm to have the serum used against this scourge of the human race, commissions were set up in many states of this country. The purpose of the commissions was primarily educational. In addition they planned to furnish practitioners with facilities for prompt typing, in various well-scattered laboratories, and with a readily available supply of the appropriate serum. Indeed, because the cost was usually quite great, it was provided often that the serum would be furnished at state expense in cases where the economic conditions justified it. Then came upon the scene a new therapeutic contender which has gone far to nullify the laborious efforts of the commissions.

The first of the new group of drugs that was to challenge the serum treatment of pneumococcic pneumonia was sulfanilamide. This seemed to be some-

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what less effective against the pneumococcus than against the streptococcus, though it should be noted here that the prowess of sulfanilamide was not as manifest when the localization of the streptococcus was the lung, nor is it equally effective against all strains of streptococcus. A second representative of the sulfonamide group, sulfapyridine, was found to have a more reliable bacteriostatic effect on the pneumococcus, and it proved to be a superior remedy in combating pneumococcic pneumonia. And with the advent of this product serum therapy, so much more difficult and more expensive to apply, began its retreat. It fell back to the reserve, a position approximately as follows. In all cases of lobar pneumonia it is well, early in the disease, to type the sputum, and in the event of unusual complications or the failure of the patient to respond to the sulfonamide, the serum should be used.

The next step in sulfonamide therapy was the introduction of sulfathiazole, equal to sulfanilamide against the streptococcus, equally as effective as the pyridine derivative against the pneumococcus, more effective than either against the staphylococcus, and somewhat less toxic than the first two products. The latest is sulfadiazine, with the bacteriostatic virtues of sulfathiazole, and still further reduced in toxicity, though more expensive. And there is no question that, despite a persisting mortality that is considerable, and in spite of frequent untoward effects of the drug, and occasionally a disaster, the sulfonamides are a boon in the treatment of pneumococcic pneumonia, as they are in numerous other infections.

The usual oral administration of the sulfonamides may in certain instances be advantageously preceded by the use of a sodium salt intravenously. In the same way in which meningococcic meningitis is commonly treated, sodium sulfathiazole, for example, may be given as the initial dose in unusually severe pneumococcic infections. The appropriate dose in a patient of average weight is about 5 grams in 100 cc. of distilled water.

Regardless of the route of administration some of the untoward effects of the sulfonamides, notably crystal formation in the urinary tract, may be minimized by giving alkalies.

One very important point relating to the use of the sulfonamides cannot be answered by any rule of thumb formula. The question of when to discontinue the drug, or to reduce the dose, is one that has to be left to the clinician's judgment in the individual case. It should not be forgotten that persistence or recurrence of fever may be caused by the drug itself. And, further, sufficient watch should be kept on blood and urine to guard reasonably well against a continuation of the therapy in the face of an unfavorable reaction.

To illustrate the place serum still holds in the treatment of pneumococcic pneumonia, reference may be made to the case of a man, aged 55, who entered the hospital in March, 1940, with a temperature of 105°. The x-ray report described "an atypical pneumonia, probably influenzal in type", involving most of the right lung. The leucocyte count was 11,000, with 89 per cent polynuclears. He was given sulfapyridine and there was a prompt drop of temperature to normal. During the next three days it ranged between normal and 100. He developed severe nausea and hiccoughs, and the drug was discontinued. The temperature promptly rose again to a range of 101 or 102. Sulfapyridine was resumed without any special benefit. Oxygen was begun and continued for several days. A blood culture was reported positive for pneumococcus type 22. Rabbit serum was obtained and he was given 200,000 units in divided doses. The temperature came immediately to normal and remained so, and the next blood culture was negative. It is a pity the report of such resourceful therapy has to be marred by the sequel. Before leaving the hospital the patient developed coronary thrombosis, and promptly died.

2. The condition represented by the second heading, the old lobular pneumonia, may result from any one of a wide variety of lurking bacterial invaders, ready to take advantage of lung tissue when resistance is enfeebled by any cause. There is little in the literature to indicate that any significant advance has been made in the treatment of this condition.

3. The third group embraces the streptococcic and staphylococcic complications of measles and influenza. Some of the newer generation of clinicians may regard this phrase as a musty line from an outmoded text-book. It is to be hoped that it will remain so, for we are again in a war, and it was in the early part of the notable year of 1918 that the sequel to measles, known as the empyema epidemic, struck the military camps, and it was in the latter part of the same year that the plague known as the influenza epidemic, with its highly fatal pneumonia, swept both the military and civilian

populations of the globe. Under the head of complications reference will be made to the treatment of empyema. The treatment of influenzal pneumonia, in 1918, was bed rest, nursing, such symptomatic remedies as were available, and a prayerful spirit. The mortality of both the empyema of the camps and of influenzal pneumonia was in the neighborhood of 30 per cent. It is still a guess as to what would have been the effect of the sulfonamide drugs. And no one can say when the matter might come to a test on a like grand scale.

5. Omitting the fourth group, which was inserted as a catch-all, it may be said that in the treatment of virus pneumonia the known sulfonamides are not helpful. Such a categorical statement might suffice if the diagnosis could be made always with certainty. One often wonders whether or not to give one of the sulfonamides. The leucocyte count is helpful in this decision, but it is not conclusive. In pneumococcic pneumonia it may not be elevated, whereas it can be so in virus pneumonia. Generally speaking, though, leucocytosis in pneumonia may be thought of as an indication for the administration of sulfathiazole or sulfadiazine. If there is doubt, perhaps the best thing to do is to give it. After about two days, the attendant in a case of virus pneumonia is convinced that it is not doing any good. The treatment is largely supportive and symptomatic.

As has been said, virus pneumonia has a low mortality, and so far it has remained remarkably free of serious complications. Pleuritic pains may occur but they are not common. Empyema is rare. Yet, recently, a case thought to be cured, and discharged to return home, was readmitted three weeks later for fever and cough. The sputum had shown no pneumococci, but streptococci were present. On re-admission x-ray examination showed a round shadow the size of an orange near the right scapula. It was somewhat higher than the original pneumonic area had been. Aspirated pus showed diplococci which did not react as pneumococci, and short-chain streptococci. The lesion was thought to be an interlobar empyema or an abscess in lung tissue. In either case it seemed to communicate with a bronchus, as suggested by the free expectoration of purulent material. For this reason a conservative plan was followed. Sulfadiazine was administered, and while it had no obvious effect, free expectoration continued, with gradual decrease first in the density and then in the size of the shadow, until the patient was again discharged, free of fever and well on the road to recovery. This case points up a question with reference to virus pneumonia which must have occurred to everyone. Will secondary invaders continue to neglect a soil which would seem to be fully as inviting to them as influenza has proved itself to be, and, in the event of such invasion, will 1918 repeat itself?

The complications of pneumonia that will be considered briefly are anoxemia, abscess, empyema, and meningitis. When the administration of oxygen appears to be indicated, our preference is for the tubal conduction method, using either a nasal catheter or the Y-pronged metal fixture inserted into the nares.

In the treatment of abscess, surgery is reserved for those cases in which the localization is immediately adjacent to the pleura, and, in our opinion, both surgery and the passage of the bronchoscope are, as a rule, better postponed until reasonable trial has been given the less spectacular procedures. These are sulfonamide medication and watchful waiting.

In empyema little can be expected of sulfonamide therapy. This applies both to the frank, thick pus of pneumococcic infection and to the thinner, muddy, purulent fluid characteristic of the streptococcus. And yet, here, again, conservatism may be rewarded. In a recent case the x-ray evidence was almost conclusive of a large collection of pus between the middle and lower right lobes. No pneumococcic pneumonia could have responded better to sulfathiazole.

In the application of surgery for empyema it is generally recognized that the operation should not be done too early. The lesson was impressed by bitter experience in the empyema epidemic in the camps at the time of "the other war". Whether or not the advantage of the later operation is fully comprehended in the idea of allowing time for the mediastinum to become fixed, the principle of avoiding a premature operation is well established.

Meningitis complicating pneumonia was at one time the beginning of the end. Here, too, the introduction of anti-sera and the sulfonamides, with chief emphasis perhaps on the latter, has brightened the picture. Somewhat comparable to the achievement in meningococcic meningitis are the results in pneumococcic meningitis. Recently, in a series of 60 cases in which the pneumococcus was the of-

fender, Hodes and his coworkers were able to report recovery in 22 per cent of infants under two years of age, and in 64 per cent of older patients.

None of this applies to the Waterhouse-Friederichsen syndrome, with its devastating hemorrhagic destruction of the adrenal glands, and speedy death. Though the condition is most frequently caused by the meningococcus, other coccal infections may be responsible. In our only case, in which the spinal fluid contained 26 cells per cu. mm., and death occurred within 36 hours, the bacteriology could not be established by examination of the spinal fluid, blood, or cultures from the purpuric skin lesions.

In summary, it may be said that it is important to recognize pneumococcic pneumonia promptly so that treatment may be begun early. Anti-pneumococcic sera are still needed at times, though the sulfonamides have come as a boon to the human race. In bacterial pneumonias other than pneumococcic the sulfonamides are worth a trial in almost every case, whether the bacterial invasion is primary or secondary. In virus pneumonia there is no specific treatment, but in the vast majority of cases the patient will get well without it. And there is the vital question as to what the sulfonamides will be worth if the secondary coccal pneumonias should reappear, riding again as one of the Four Horsemen, alongside war.

McGuire Clinic.

Penicillin Bibliography.

Announced in the June issue of Medical Journal Abstracts, the very complete 93-page annotated bibliography, Penicillin and Other Antibiotics Produced by Microorganisms, published by E. R. Squibb & Sons, has had widespread distribution, both to physicians in civilian practice as well as to those with our armed forces.

The bibliography is divided into three parts. The first portion, containing abstracts of 105 papers, deals with Penicillin, and since the arrangement is chronological the historically-minded reader can follow investigational progress from Fleming's announcement of his discovery in 1929 up to the clinical report of Mayo Clinic's Doctors Herrell, Cook and Thompson in the May 29, 1943, issue of the *J.A.M.A.*

The second part of the bibliography contains 124 papers dealing with Tyrothricin and Other Antibiotics from Bacteria. The third section includes 20 references to Antibiotics from Various Organisms and to reviews of all these subjects. The utility of the bibliography is measurably enhanced by a very detailed author and subject index. The publishers announce copies are available gratis to physicians; address Professional Service Department, E. R. Squibb & Sons, 745 Fifth Avenue, New York, 22, N. Y.

National Hearing Week

Will be observed throughout the United States and Canada, for the seventeenth consecutive year, October 24-30. It is sponsored by the American Society for the Hard of Hearing, Washington, D. C., and its 121 chapters, and the theme is The Magic of Hearing. The purpose of the week is to emphasize the value of hearing and the means of conserving it; the great prevalence of lowered hearing and the means of offsetting ensuing difficulties of communication—lip reading and accepted mechanical devices.

National Hearing Week has an added significance, this year, for already soldiers and sailors are returning from battle fronts with war damaged ears. To prepare them to take again their rightful places on the home front, the Society and its chapters are cooperating with the Army, the Veterans Administration and the U. S. Rehabilitation Service. These agencies have already arranged for the teaching of lip reading and the use of mechanical aids when possible.

MENINGOCOCCIC MENINGITIS

A Clinical Evaluation of 27 Cases Observed at the Riverside Hospital, Newport News, Va., from November 1, 1942, to May 3, 1943.

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The purpose of this paper is to present the varied experiences encountered in the clinical course of 27 cases of epidemic meningitis treated at the above institution during the six month period when the disease was endemic in this area. It is hoped that by calling attention to our problems and procedures, definite conclusions may be drawn which will aid in a more thorough understanding of the disease. The practical clinical phases of diagnosis, prognosis, course, complications and therapy will be stressed here to the end that our experiences and deductions therefrom may aid in the evolving of a rational plan of treatment.

DIAGNOSIS

In twenty-four cases the diagnosis was confirmed by the presence of meningococci in the spinal fluid. In three cases no meningococci were found in the spinal fluid but the clinical signs were so conclusive that the diagnosis could be made without reservation.

Symptoms were typical in twenty cases, i.e., history of upper respiratory infection from one to four days previously, followed by headache, nausea, vomiting and drowsiness or coma. On admission these patients were found to have stiff necks, positive Kernig's and Brudzinski's signs, and the spinal fluid appeared turbid and in most cases contained meningococci.

Seven cases were classed as atypical and further subdivided as follows:

A. Three cases were characterized by very sudden onset but were diagnosed with no difficulty because of marked rigidity of the neck.

Case 1: W.L. A 15 year old white male complained of a chill the night prior to admission and the following morning he could not be roused. He had no vomiting and no other complaint. On admission the patient was in a stuporous state and totally unresponsive. His neck was stiff, Kernig's sign positive and a diffuse macular purplish rash was evident all over the body. Lumbar puncture revealed a cloudy fluid and meningococci were found in the fluid.

Case 2: H.L. A white 17 year old male was completely symptom free up to the day of admission to the hospital. The morning of admission the patient felt ill while on way to work and suddenly developed headache and vomiting. When brought to the hospital about three hours after onset of above he was very drowsy but could be aroused with some difficulty. Diagnosis was made on the basis of above and stiff neck, positive Kernig's and Brudzinski's signs and lumbar puncture.

Case 3: N.R. A white female, 18 years of age, had reported for work at her defense job as a plumber's helper in the local shipyard the day of onset of her illness. She returned to her home for lunch at 12:30 P. M. and complained of headache, chills and pains in the extremities. A few hours later the patient commenced to vomit and became exceedingly restless and irrational. Shortly afterward, stupor set in, at which time the patient was admitted here. A sister with whom she lived stated that the patient had gone to work that morning in excellent health and spirits and had had absolutely no complaints at the breakfast table.

On admission, physical examination disclosed a well developed, well nourished white female, obviously very acutely ill and in a comatose state. The neck was rigid and Kernig's and Brudzinski's signs were positive. A hemorrhagic rash was evident all over the body but particularly marked over the lower extremities. Petechial hemorrhages were visible in the conjunctivae. During examination she developed epistaxis which was easily controlled by an anterior pack. The heart exhibited no abnormality other than marked tachycardia with accentuation of the heart sounds. The lungs were clear to auscultation and percussion. The temperature was 104.4 rectally, and pulse 160 and respirations were 50 per minute.

A lumbar puncture performed disclosd a clear

fluid, pressure in the upper limits of normal (200 mm. H_2O), cell count only 2 cells per cu. mm. and no organisms were detected in the smear. This undoubtedly represented a severe case of meningococcic septicemia without localization in the meninges at this time.

Despite sulfadiazine administration this patient succumbed after seven hours in the hospital, after a total illness of approximately sixteen hours.

At autopsy it was evident that the hemorrhagic tendency was not restricted to the skin and subcutaneous tissues. The mucous membranes of the intra-thoracic and abdominal cavities and their lining membranes showed injection and diffuse petechial hemorrhages such as were seen in the conjunctivae. The pericardium was smooth but exhibited scattered petechial hemorrhages, the pleurae were likewise involved and the peritoneum was markedly injected and granular in appearance. The mesenteric lymph nodes were enlarged and were reddish in color due to a suffusion of blood. The heart was markedly increased in size due to dilatation. The surface showed a few petechial hemorrhages. On section the cavities and valves were normal in appearance. The lungs were edematous and congested but no consolidation existed. The spleen, pancreas and liver were normal except for slight injection. The kidneys were normal in size and shape. The capsule of each was adherent and, when removed, left somewhat granular and mottled surfaces. On section the pyramids were deeply congested. The cortex was increased in width and the markings were of coarse texture. At a few points grayish areas were seen which resembled early abscess formations. The pelves and ureters were normal. Of significance were the adrenal gland findings: Both glands were enlarged and both showed marked hemorrhage into the tissue.

The gastro-intestinal tract was normal. The reproductive organs appeared the seat of marked reaction. Both fallopian tubes were increased in size and markedly congested. Upon pressure yellowish material exuded from each fimbriated extremity. Both ovaries showed large hemorrhagic bodies which on section appeared to be corpora hemorrhagica developing into corpora lutea.

The pathological findings may be summarized as follows:

1. Generalized hemorrhagic rash of surface of body, peritoneum, pleura and pericardium.
2. Marked edema and congestion of lungs.
3. Dilatation of heart.
4. Bilateral hemorrhages of adrenal glands.
5. Acute nephritis with abscess formation.
6. Acute pelvic inflammatory disease (acute salpingitis).

B. Three additional cases presented diagnostic problems in that there was no stiffness of the neck nor limb spasticity on admission.

Case 1: J.A. This patient was an 18 year old colored male whose illness was diagnosed as influenza on the basis of a history of malaise, slight headache, generalized aches and pains, fever and occasional chills. On admission, a well developed, well nourished colored male was seen who did not appear acutely ill but he did complain of slight headache. The possibility of meningitis was considered by one of us at this time (I.T.) but was overruled because of the absence of a stiff neck, negative Kernig and Brudzinski signs, absence of exanthema or enanthema and the general appearance of patient who, as mentioned, did not appear ill; temperature was only 98.8, pulse 76 and respirations 25.

On the fourth hospital day, after an uneventful course during which time simple analgesic therapy was employed and the temperature was never higher than 99.6, the patient suddenly presented a changed picture. The temperature rose to 102.8, stiffness of the neck developed, Kernig's sign became definitely positive and the patient became extremely restless and complained of severe headache. Lumbar puncture was performed and confirmed the diagnosis of meningitis. Many gram negative diplococci were found in the smear and the cell count was 475 per cu. mm. Sulfonamide therapy was instituted and the course thereafter was uneventful up to time of discharge.

Case 2: In the second case a tentative diagnosis of Henoch's purpura was made because of the extreme purpuric skin rash, petechial hemorrhages of the mucous membranes and gastrointestinal symptoms. However, a recounting of this case will establish how the correct diagnosis was arrived at in a comparatively short period of time.

H.C., a 32 year old white female, was brought to the hospital at 1 A. M. because she suffered from repeated attacks of vomiting and abdominal pain. The onset of the disease was sudden, 14 hours prior to admission. In addition to the above symptoms the patient complained of weakness and generalized

aching but not particularly of headache. She was very weak and seemed slightly drowsy. There were no other gastro-intestinal symptoms except constipation for which she had taken a cathartic.

She had always been very healthy except that she had had jaundice eight years ago and had leukorrhea with low back pain for several years. She had one normal child and no miscarriages.

The physical examination revealed a well developed, rather slender female who appeared to be acutely ill. Temperature 102.6, pulse 116, respiration 26. The patient was extremely pale and covered with a petechial rash on her skin, conjunctivae and buccal mucosa.

The movements of the eyeballs were not limited. The pupils reacted to light and accommodation. The ears were normal. The throat was negative except for the presence of petechiae. The heart was normal in size and rhythm, no murmurs. B. P. 70/40. Lungs were clear.

The upper part of the abdomen was found to be slightly tender and rigid. The spleen, liver and kidneys were not palpable. The nervous system was found to be normal except for extreme muscular weakness and slight drowsiness. There was no nuchal rigidity and no Kernig. Reflexes were normal and a clear spinal fluid under normal pressure was obtained. It showed 28 cells, 90 per cent of which were polys, and there were no organisms in the smear. The clotting time was 8 min. and the bleeding time 4½ min., w.b.c. only 11,000 per cubic millimeter.

A tentative diagnosis of Henoch's purpura was made, but the possibility of meningeal or rickettsial infection was kept in mind. The patient was treated symptomatically with intravenous fluids and adrenalin.

At 8 A. M., seven hours after admission, her general condition seemed improved. The temperature was down to 100.2, but pulse was 140, respiration 25. The blood pressure had gone down to 60/40 and a few more petechiae had appeared on the skin. There was still no Kernig, no stiffness of neck and the vomiting had ceased. W.b.c. 27,000 per cubic millimeter.

At noon, i.e., 24 hours after the onset of vomiting, another spinal tap was done. The fluid was clear and under normal pressure. 139 cells, 95 per cent of which were polys, many gram diplococci, were present. There still was no Kernig, no stiff neck and no headache. Intensive treatment was started immediately. Six gms. of sulfadiazine orally and 30,000 units of meningococcus antitoxin (I.V.) were given within 4 hours, followed by 1 gm. of sulfadiazine every 4 hours.

At 4 P. M. the patient finally showed definite signs of meningitis, temperature 104, semi-comatose, stiff neck and Kernig +. At 10 P. M. she was completely conscious and felt much better, temperature down to 101. The nuchal rigidity persisted until the next morning. From then on the patient's recovery was uneventful.

Case 3: The third case is of interest not only from the standpoint of diagnostic problem involved but also from the fact that this case illustrates the occurrence of the relatively rare complication of pneumonia in which the apparent etiologic agent was the meningococcus.

G.L., a 25 year old man, was admitted to the hospital with acute dyspnea. He was semi-comatose and unable to give a history. According to his family he had had an upper respiratory infection for about three weeks, and, the day prior to admission, became feverish, irrational and more and more dyspneic.

Past history and family history were irrelevant. Physical examination revealed a well developed and well nourished male in acute dyspnea and markedly cyanotic. He was semi-comatose and responded with difficulty. Eyes, ears, nose and throat were normal. The tongue was very dry. Heart was normal in size and regular; no murmur was heard. B. P. 110/80. There was an area of dullness at the base of the right lung and a few moist rales at the right apex anteriorly. The abdomen was distended, tender and rigid in the right upper quadrant. The skin was cyanotic and did not present any eruption. The neck was supple and no Kernig or Brudzinski sign existed. The reflexes were normal. Temp. 100.4, pulse 110, resp. 35. W.b.c. 35,000, polys 94 per cent, r.b.c. 3,710,000, hgb. 75 per cent. Urine showed 2+ albumin and numerous r.b.c.

A portable x-ray of the chest showed some consolidation at the right base.

The diagnosis at that time was right lobar pneumonia with marked toxemia. The patient was treated with sulfadiazine and oxygen but showed no improvement the next morning.

At noon on March 4, his second hospital day, a rusty, viscid sputum was obtained. There were signs of left lobar pneumonia added to those of the

right side. The temperature was 99.5 and pulse 135. No stiff neck, no apparent Kernig sign. A smear of the sputum disclosed the presence of great numbers of Gram negative diplococci morphologically identical with the meningococcus. Because of the abnormal sputum findings a spinal tap was done the evening of this same day and showed cloudy fluid under increased pressure (490 mm. H_2O). The smear revealed many pus cells and numerous gram negative diplococci. This confirmed the diagnosis of meningitis but the patient had at no time complained of headache, had not vomited and never had a stiff neck nor plus Kernig.

On March 5, his third hospital day, 30,000 units of meningococcus antitoxin were given intravenously and sulfadiazine was discontinued because the urine showed 3+ albumin, many waxy casts and many red blood cells. The sulfadiazine blood level at this time was 10 mgm. per cent. The patient failed to respond under this treatment and became progressively weaker and died the following day.

At autopsy, the findings were:

1. Bilateral pneumonia.
2. Acute fibrinous pleurisy.
3. Marked edema of lungs.
4. Dilatation of heart.
5. Acute nephritis.
6. Small petechial hemorrhages noted throughout the viscera.
7. Generalized anasarca (hydro-pericardium, hydro-pleura, ascites).
8. Small purulent placques of a yellowish color were noted adherent to all of the organs and floating free in the fluid within the body cavities. Smears of these placques disclosed gram negative intra- and extra-cellular diplococci, morphologically identical with the meningococcus.

PROGNOSIS

Although the prognosis has become undoubtedly better since the advent of the sulfonamides, nevertheless early diagnosis and energetic treatment are essential if the mortality rate is to be kept at a minimum. Four deaths occurred in our series, a 14.8 per cent mortality which might have been considerably reduced but for delay in diagnosis in one case and neglect of the patient in securing medical care until an advanced stage of the disease had been reached in the other case.

The temperature seems to be the foremost sign of prognostic significance. The other symptoms tend to disappear more slowly and in the following order: first, drowsiness; then headache and, finally, the neck rigidity subsides and the spinal fluid clears up. With adequate sulfadiazine dosage (blood levels 10-15 mg. per cent), the temperature appears to respond according to two fairly well defined patterns in those cases resulting favorably. The first group consists of: (1) Patients who appeared for treatment with a high initial temperature (over 103 degrees F.). They usually responded to adequate sulfadiazine administration rapidly and without much fluctuation of the temperature curve. Thirteen cases presented the above finding, and six additional cases were observed who appeared with comparatively low initial temperatures (100-101 degrees F.), and within 4-8 hours after sulfadiazine administration their temperatures rose to 102-104 degrees and then returned to normal limits rapidly and with only few remissions. It was noted that once the temperature reached a normal level the tendency was for it to remain fairly stable; however, in seven cases exacerbations occurred in which the temperature oscillated between 99-100 degrees F. for 3-5 days without appreciably altering the clinical picture.

(2) Two cases were encountered illustrative of the second type of response which was not so prompt, although ultimate recovery occurred.

A. The case of A.C., a sixty year old white male, illustrates this type. Here the temperature fluctuated between 100-102 degrees for seven days and reached a normal level on the eighth day.

B. Case 2, B.W., is also typical of this group. This twenty-seven year old white male reached a normal level only after eleven hospital days after having fluctuated from 101-105 degrees.

In the preceding cases the advanced age of the first case may have been a predominating factor in the atypical response, while in Case 2 the complicating factor of a serum sensitivity must be considered since this patient was in such poor condition that antitoxin and sulfadiazine were administered concurrently.

The age of the patient must be considered as an important factor in the prognosis. Eighteen cases were under twenty years of age and with the exception of one fulminating case resulting in death they followed the pattern of group one, with rapid tem-

perature remission and uneventful convalescence. Of the nine cases over twenty, three died, two had rather stormy clinical course with eventual recovery, while one presented the stigmata of an extremely severe infection which almost certainly would have led to death but for very early diagnosis and most energetic treatment. Only three patients in this age group presented a mild form with resultant uneventful clinical course.

Four cases of this series resulted in death. Perhaps it would not be amiss to review them briefly at this time:—

1. N. R., the 18 year old white female previously presented in detail, was undoubtedly a victim of the fulminating type of infection which produced overwhelming toxemia. Even though diagnosis was made early, death was apparently inevitable.

2. E.S., a 30 year old white male, also exhibited signs of extreme toxicity. His death, however, we classify as a preventable death. His case will be discussed in detail under the section on treatment.

3. G.L., a 25 year old white male, has already been discussed fully. His death apparently was due to a severe infective process with localization of the meningococci in the lungs, with production of a meningococcal pneumonia rather than a meningeal localization.

4. The fourth death case also involved a pulmonary complication. In this case a toxic pulmonary edema complicated the clinical picture. This 50 year old colored male was brought to the hospital in a highly excited state. He was so completely irrational and delirious that restraint was necessary. All that was known of his present illness was that he had been ill for two days and complained mainly of headache. No past history could be obtained, since the patient had been brought to the hospital by individuals not acquainted with his past.

Physical examination revealed a middle aged well developed, well nourished colored male very restless and breathing very stertorously. The neck was rigid and the legs were so spastically flexed that it was impossible to extend them at all. The teeth were clenched and the mouth could not be opened to examine the throat. Both lung fields exhibited many moist bubbling rales from base to apex. The heart sounds were heard with difficulty because of the noisy breathing. The abdomen was rigid. Blood pressure was 120/84, temperature 100.5, pulse 90 and regular, respirations 25. The white cell count was 27,300 per cu. mm. with 93 per cent polys. The urine was negative. A spinal tap showed a turbid fluid under increased pressure with 37,000 cells per cu. mm. and many gram negative diplococci.

The patient was given 5 grams of sodium sulfadiazine intravenously. Twenty-four hours later a spinal tap showed a marked diminution of cells and meningococci. The blood sulfadiazine level at this time was 6.6 mg. per cent, whereupon another 5 grams was given intravenously. However, the pulmonary edema which had shown some signs of remission a few hours after the first dose of sulfadiazine became steadily worse despite oxygen, intravenous aminophyllin, hypertonic glucose and digitalis. The temperature rose to 103.5 degrees and the pulse to 60 and the patient expired on the second hospital day of pulmonary edema.

TREATMENT

There is no question but that the sulfonamide drugs account for the reduced mortality rate and bettered prognosis in epidemic meningitis. The drug used exclusively in our cases and which has been generally recognized as most efficient and least toxic is sulfadiazine. A blood level up to fifteen mg. per cent has been advocated for treatment in meningococcic meningitis. In most of our cases we were satisfied with a blood concentration of 10 mg. per cent, a figure which proved generally satisfactory.

From a practical standpoint we proceeded as follows: The oral dosage was determined on the basis of approximately 1 grain (60 mg.) per pound of body weight per twenty-four hour period. The average adult requirement will be 8-10 grams. Usually 4 grams were administered on admission, followed by 1 gram every four hours. Heavier patients, or the more severe cases, were given 4 grams followed by 2 grams in four hours with subsequent dosage of 1 gram every four hours.

When intravenous medication was employed a single initial dose of approximately 5 grams was administered for the first twenty-four hours. This dose is figured on the basis of .030 grams (½ grain) per pound of body weight. This dose may be repeated in twelve to twenty-four hours.

In children the same proportions can be maintaind, as mentioned above, although for establishment of an adequate blood level we found that a

dose of 1½ grains per pound of body weight was necessary for the first twenty-four hour period. We ordinarily employed one-third of this amount for the initial dose and the remainder was divided equally and given every four hours.

Twelve to twenty-four hours after admission the sulfadiazine level was checked. If the concentration was found to be 8-10 mg. per cent, a maintenance dose was administered which for the average adult was approximately 1 gram every four hours. This dose was continued for several days and then gradually decreased as symptoms subsided. Daily sulfadiazine levels were performed and when the concentration was found low, either the maintenance dose was increased or a single extra dose of 2 grams was administered and repeated as required.

Three difficulties were encountered in the oral treatment: First, a more or less constantly vomiting patient, secondly, an irrational uncooperative patient who could not be persuaded to swallow, or, thirdly, the unconscious patient. In the first case, the medication could be repeated following each emesis until finally the patient would keep sufficient drug down to build up an adequate level, a wasteful method. If this method proved unsuccessful, intravenous medication was employed. Recently the hypodermic administration of sodium sulfadiazine has been successfully employed by Taplin, Custer and Young (*J.A.M.A.*, Jan. 30, 1943, P. 313). We have used this method also with good results. An adequate blood level can be attained and maintained by this method. As soon as nausea and vomiting subsided, oral medication was employed.

With the irrational or unconscious patient oral medication can be employed by means of the stomach tube. However, where a more rapid blood concentration is desired, the intravenous or hypodermoclysis method can be used. Since it has been demonstrated that a relatively constant level is best maintained by treatment per os, it is advised that this route be employed as soon as feasible, or concurrently with intravenous or subcutaneous administration.

Adjunctive therapy is particularly essential when the sulfonamides are employed:—

1. Fluids must be administered early in the disease, since the dehydration accompanying the vomiting, sweating, and diminished fluid intake will predispose to renal obstruction.

2. Alkalinization is of prime importance as well, since Fox, Jensen and Madge, (*J.A.M.A.*, April 3, 1943, P. 1147) have shown that the solubility of sulfadiazine, sulfathiazole and their acetyl derivatives is greatly increased in alkaline urine. They recommend that sodium bicarbonate be administered in sufficient amount to keep the pH of the urine 7.5 or higher during therapy with the sulfonamides. For this purpose, larger amounts of alkali may have to be used than have heretofore been employed, but these authors encountered no difficulties with daily administration of 10-20 grams sodium bicarbonate over prolonged periods.

We feel that a more keen appreciation of this factor might have averted one of the deaths which we encountered early in the course of this endemic. Perhaps a recounting of this case might not be amiss at this time to impress the necessity of maintaining a constant vigil of kidney function while sulfonamide therapy is being employed.

1. E.S., a well developed, well nourished white male, thirty years of age, developed chills, generalized aches and pains and severe headache two days prior to admission. On the day of admission the patient developed convulsions and went into a comatose state. When seen at the hospital, the patient was in a delirious, maniacal state, completely out of touch with his surroundings and requiring restraint to prevent him from committing injury to himself. The neck was extremely rigid, Kernig's and Brudzinski's sign were positive. No skin rash was noted. The temperature was 105.6, pulse 140, and respiration 32. A lumbar puncture showed a turbid spinal fluid with 19,000 cells per cu. mm. Gram negative diplococci were isolated from the smear and the spinal fluid sugar was 32 mg. Urine albumin and sugar were negative and rare white cells were seen. On this basis a definite diagnosis of meningococcic meningitis was made.

Shortly after admission 5 grams of sodium sulfadiazine was administered intravenously. The temperature did not remit and the patient's condition remained unchanged. Twelve hours later another 5 gram dose of sodium sulfadiazine was given. Sodium luminal intramuscularly in 2 grain dosage was used to combat restlessness. 3000 cc. of 5 per cent glucose in Ringer's solution was administered also during this first twenty-four hour period.

Twenty-four hours after admission the rectal temperature was still 106 degrees and the general condition of patient was unchanged. A blood sulfa-

diazine level performed at this time was 15.3 mg. per cent. At this time it was decided to employ meningococcic antitoxin in an attempt to overcome the evident toxemia. 40,000 units were given intravenously. The temperature dropped dramatically and twenty-four hours after serum administration the temperature had fallen to 100 degrees, a decline of 6 degrees within twenty-four hours. Sulfadiazine meanwhile was continued with a dose of 1 gram every four hours administered by way of a stomach tube. A sulfadiazine level at this time, forty-eight hours after admission, was 9.5 mg. per cent. Adequate precautions to maintain sufficient fluid intake were observed and the intravenous route and stomach tube were used for this purpose.

This temporary improvement, however, was short lived. Twelve hours later the temperature was up to 104 degrees. An additional 20,000 units of antitoxin were administered intravenously at this time. This was followed by a slight remission of temperature to 102 degrees and slight improvement in the general condition of the patient. However, sixteen hours later, the temperature had again climbed to 106.4 degrees. Spinal fluid cell count at this time was 5,300 per cu. mm. Physical examination now disclosed the development of a pneumonia in the right base. Pulse was over 150 and respirations were 60 per minute. It was noted that the urinary output was somewhat depressed. Urinalysis showed an acid urine, albumin 1+, sugar negative, casts negative and only a rare white cell. However, 40-50 red cells were visible per high power field in the centrifuged specimen. The following day the urinary findings were numerous red blood cells and a 4+ albumin. Sulfadiazine was discontinued while attention was focused on overcoming the oliguria and hematuria. The blood sulfadiazine level was 9.5 mg. per cent. Gross hematuria was the next development. The N.P.N. was now 87.4 mg. and the patient appeared to be in extremis. Hypertonic glucose was administered, followed by intravenous sodium bicarbonate 1.5 grams in 1000 cc. Ringer's solution. Coramine, caffeine and digifoline were now necessary in attempt to overcome the marked depression. The patient responded to the above measures only transiently and succumbed shortly afterwards while preparations were under way for renal lavage.

It is significant that just prior to exitus the urine was acid, albumin 4+; granular casts were frequent and white and red cells were too numerous to count. The spinal fluid cell count was only 350 per cu. mm. It is the opinion of those of us who observed this patient that the meningitic symptoms had definitely remitted only to be replaced by a uremic picture, the consequence of renal obstruction due to sulfadiazine precipitation. Permission for autopsy was not granted.

Another case of apparent renal toxicity was encountered in this series. A twenty year old white female who had responded well to sulfadiazine therapy developed severe left flank pain which radiated to the labia. The blood sulfadiazine concentration was only 5 mg. per cent at this time. This patient had no history of any ureteral colic previously nor of any kidney abnormality or dysfunction, so that we attributed her difficulties to renal precipitation of sulfadiazine. Only an occasional red cell was visible in the centrifuged urine specimen. Response was prompt on simple discontinuance of two doses of sulfadiazine and additional alkalinization and forcing of fluids.

Three other cases developed hematuria of varying degree which likewise disappeared on discontinuing the drug for a limited time. With gradual reintroduction of the drug no subsequent hematuria developed. Several cases showed rare red cells and 1+ albumin in the urine prior to sulfonamide administration. These urinary findings gradually disappeared within forty-eight hours after sulfadiazine. It is our belief that this abnormal urinary picture before sulfadiazine intake was the result of a focal nephritis accompanying the meningitis and subsiding with it. Therefore, we have considered only hematuria subsequent to sulfadiazine administration as a basis for discontinuance of the drug.

We have of late made it a matter of routine to administer at least 4 grams sodium bicarbonate every four hours and 8 ounces of water every two hours in the medication of the average adult patient. Where oral medication is impracticable, recourse is had to intravenous glucose in 5 per cent solution.

Following the death case, all of the cases hospitalized, were subjected to a daily urine analysis. Hematuria, oliguria, or both, must be considered serious signs and discontinuance of sulfadiazine and adequate alkalinization of the urine should be one of the prime requisites at this time. The presence of sulfadiazine crystals in the urine is also indicative of the need for alkalinization.

By way of summary, we must emphasize the need for alkalinization of the urine, the pH of which should be measured and regulated by adequate doses of alkali to pH 7.5 or slightly more. Of course, it goes without saying that we should not go to extremes in alkalinization therapy and should keep in mind the problem of alkalosis. Frequent CO_2 combining power determinations of the blood are indicated to avoid this occurrence as well as careful observation for any evidence of tetany.

None of the other evidences of sulfonamide toxicity, skin rash, cyanosis, blood dyscrasias, etc., were encountered by us in this series of patients.

Meningococcic antitoxin still has an important place in the therapy of meningitis. It should be employed along with sulfadiazine in the very toxemic patient. However, in our experience it must be employed early in the progress of the disease to do much good. Another indication for its use is in those cases where sulfonamides must be discontinued because of factors such as idiosyncrasy or kidney damage.

Sedation of the restless, irrational patient is another measure which must be attended to to keep the patient from exhausting himself. We found sodium luminal, given intramuscularly, to be a valuable medicament for this purpose. Occasionally, paraldehyde per rectum was used. Restraint of the excited, irrational patient may be necessary, and in this connection, it is well to bear in mind that frequent changes in position are necessary to avoid development of hypostatic pneumonia which seems to develop despite relatively high sulfadiazine blood levels.

SUMMARY

1. From a diagnostic standpoint, particularly during times of increased prevalence of epidemic meningitis, the spinal tap should assume a routine function. In all questionable cases, repeated taps should be done at twenty-four hour intervals. We have encountered a few cases where spinal fluid signs have been negative at the first tap, only to become quite typical within twenty-four hours at a succeeding tap.

2. We must be constantly on guard for atypical types, such as the severe septicemic form. One case is presented in which death resulted within twenty-four hours of onset of symptoms. Another case is presented which showed the stigmata of this variety, but terminated successfully because of early diagnosis and intensive, energetic therapy.

3. Absence of signs of meningeal irritation must not preclude meningitis in the differential diagnosis. Three cases are presented in which no stiff neck nor Kernig's signs were found.

4. Three cases are presented of interest because of the rapidity of onset, the patient experiencing little or no prodromal period, but being "struck down," so to speak, while engaged in his ordinary undertakings.

5. A case of meningitis is reported in which the chief complication arising was a meningococcal pneumonia which did not respond to therapy.

6. The temperature is an excellent barometer of prognostic significance.

7. Age plays an important part. Of 20 cases under 20 years of age, 19 made uncomplicated recovery, while 1 died. Seven cases over 20 years of age resulted in three deaths, while the remainder had comparatively severe clinical courses.

8. The four death cases are briefly reviewed.

9. The enteral and parenteral dosage of sulfadiazine for the various age groups is listed.

10. The indications for oral, intravenous and the subcutaneous routes for administration of sulfadiazine are stated.

11. The need for adjunctive therapy during sulfadiazine administration is stressed. A proper fluid balance and adequate alkalinization and sedation are necessities of good therapy.

12. Sulfadiazine toxicity as a factor in renal damage is noted and cases illustrative of this complication are presented.

CONCLUSIONS

1. In questionable cases of meningitis one should not hesitate to do a lumbar puncture. In times of increased prevalence, any one symptom of meningitis is reason enough for the above procedure.

2. A negative lumbar puncture does not exclude meningitis; therefore, in all suspicious cases, repeated punctures should be made.

3. The average case will respond to adequate sulfadiazine therapy in 24-48 hours, evidenced by a return to normal temperature.

4. The prognosis is excellent in children and young people.

5. Treatment should be aimed at the early procurement of a high sulfadiazine blood level by a

high initial dose, followed by an adequate maintenance dose.

6. Kidney complications due to sulfadiazine toxicity can be averted or mitigated by:—

(a) Alkalinization and forcing fluids.

(b) Daily urine analysis and charting of intake and output.

(c) Discontinuance of sulfadiazine where signs of renal lesions develop.

Riverside Hospital.

Floral Eponym (8)

LANTANA BARTRAMII—BALDWIN

JOHN BARTRAM (1699-1777) was born in Derby, Delaware County, Pennsylvania, in 1699. He received the best education the neighborhood afforded, which was not much in those primitive times. He undoubtedly practiced medicine and surgery, but nothing is said of his medical education. However, neither his practice nor his farm prevented him from "botanizing" all over the country from the Great Lakes to the everglades of Florida. He was well over sixty when he was appointed the King's Botanist in America and commissioned to discover the source of the St. Johns River. Alexander Garden was surprised at this appointment for he says that Bartram can scarcely spell and knows nothing of the generic character of plants and can neither class them nor describe them. Nevertheless Bartram was a great letter writer and his correspondence with Linnaeus, Gronovius, Delibard, Sir Hans Sloane, Caterby, Dillenius, Collinson, Fothergill, George Edwards, Philip Miller and Targioni in Europe and Dr. Franklin, Dr. Garden, John Clayton, and Governor Colden in North America, has both a scientific and an historical interest. Undoubtedly he was the dean of Colonial botanists and was the first to establish a botanical garden. Linnaeus called him the greatest natural botanist in the world. The garden still exists in Philadelphia.

William Baldwin who is responsible for the name *Lantana Bartramii,* says the "*Lantana* which he discovered I have called *L. Bartramii.* . . . This is a beautiful plant, attaining to the height of six feet—and abounds along the coast of Florida." The Linnaean genus *Bartramii* was unquestionably named for John Bartram as well as the well known genus *Bartramia* of Hedwig. Neither name is tenable under modern rules of nomenclature.

RECENT ADVANCES IN INTRA-CAPSULAR CATARACT SURGERY*

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and
JAMES H. GRESSETTE, M.D.,
Roanoke, Virginia.

Despite the advances made in the general care of the eyes, cataracts in the adults still constitutes one of the major causes of blindness. The technique in cataract surgery has undergone a gradual evolution in the past fifteen years. Through observation in visiting eye clinics in various parts of the country, and assisting operators from the various medical centers at our hospital during the past seventeen years, in the week of our Spring Graduate Course, we have picked up a little bit here and a little bit there, and, endeavoring to utilize the best features, we have worked out a technique which in our hands gives uniformly good results. We do not claim originality in any of the steps of the operation. We will not discuss the general examination of the patient or the special examination of the eye or the indications for intra-capsular operations. It is to be assumed that a proper diagnosis has been made and the physical examination, including elimination of foci of infection, has been properly carried out.

Fig. 1.—Illustrates (1) the position for sutures for retracting the lids, and (2) illustrates the conjunctival incision.

Twenty-four or preferably forty-eight hours prior to operation, the patient is given intravenously twenty-five million typhoid H antigen. The night before the operation, the patient is given one and one-half grains of nembutal and the following morning another one and one-half grains, one and one-half hours before the operation; and one hour before the operation an H M C tablet number two is administered hypodermically. Thorough anesthesia is obtained by the instillation of pontocaine one-half per cent in the conjunctival sac and retrobulbar injection of one-half cc. of one per cent solu-

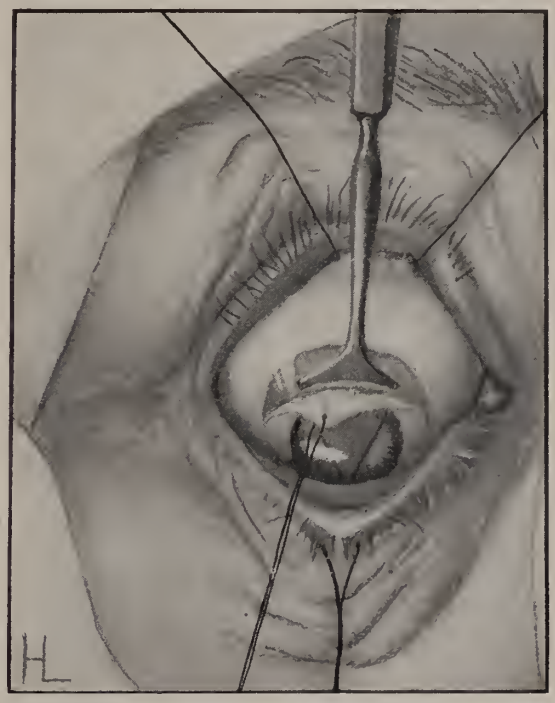

Fig. 2.—Illustrates (1) the conjunctival flap, and (2) the keratome incision. Note the keratome enters the anterior chamber as far as the cutting edge will permit.

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*Read before the annual meeting of the Virginia Society of Otolaryngology and Ophthalmology, May 15, 1943, Lynchburg, Va. This was read by Dr. Gill.

tion of novocaine with adrenalin. Akinesia is produced by the Van Lint method. We do not use a speculum, the lids being held open and eye held down by silk sutures. The upper suture is placed under the superior rectus muscle four to six mm. back of its insertion. The lower lid is held down by a suture placed through the skin near the lid margin. The sutures are attached to the drapes by hemostats.

The next step is the formation of a conjunctival flap which is three mm. from the corneal limbus, extending a full one hundred and eighty degrees concentric with the limbus. The dissection is carried out very carefully and deliberately to avoid button-holing. The conjunctiva should be grasped with the toothless forceps.

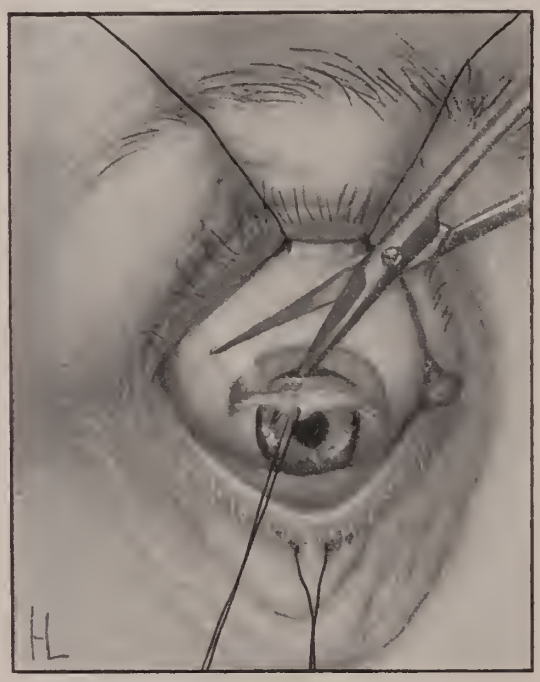

Fig. 3.—Illustrates the enlargement of the incision with Castraviejo scissors.

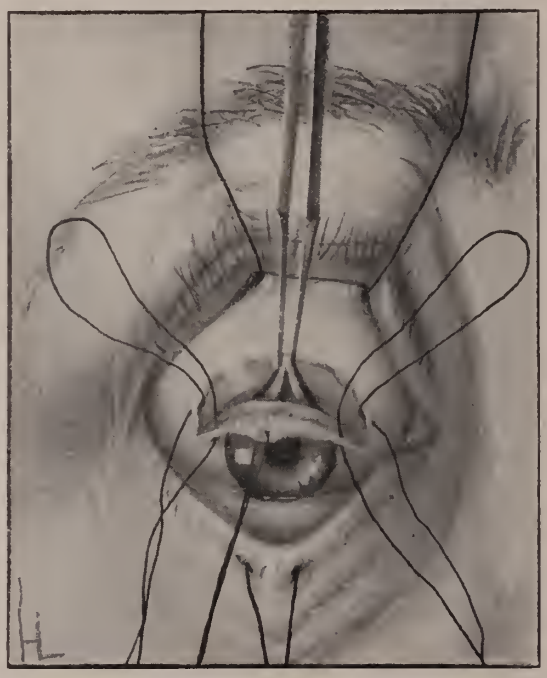

Fig. 4.—Illustrates the iridectomy. The central suture is used as traction and this gives a good view of the iris.

At this point all bleeding points are carefully controlled either with the use of adrenalin or touching the bleeding points with the end of a strabismus hook which has been heated in the flame of an alcohol lamp.

A flap of this size makes an incision with the knife unhandy and following the technique described by Cooper[1] we make a keratome incision. The point of the keratome goes through the sclera just back of the limbus and extends the full width of the cutting edge. We have a specially devised keratome which is fourteen mm. in width at its base. The incision is now widened with Castroviejo scissors. By repeated small snips the incision is enlarged to the horizontal meridian. The scissors guide the incision and the possibility of injuring the iris is thus eliminated. The prepared conjunctival flap is now brought back to its original position and the two lateral sutures, one at ten o'clock and the other at two o'clock, are drawn through and looped out of the way. The central suture goes through the conjunctiva adjacent to the cornea at twelve o'clock, but it does not go through the upper flap. This suture is used for traction by the assistant during the iridectomy and the extraction of the lens. This method of placing sutures was described by Green.[2] In the description of his technique for this operation he referred to the article by Voerhoeff which was published in the Translation of the Ophthalmological Society 25-54-62, 1927. The assistant now makes slight traction on the central suture; this brings the iris clearly into view. The iris is grasped near the pupillary border and a complete iridectomy is performed. This is the best assurance against post-operative prolapse of the iris. Too much stress is made by some surgeons of the desirability of se-

curing a round pupil. The angles of the coloboma are now carefully inspected and placed in good position by an iris repositor. If at any time blood enters the anterior chamber it should be immediately washed out with warm half normal saline solution.

We come now to the final step of the operation, the extraction of the lens in capsule. Either with a loop or a strabismus hook, continuous to and fro pressure movements are made on the cornea near the limbus. At the same time the assistant makes traction on the central suture, thus enabling the operator to clearly see the lens the moment it begins to present in the wound. As soon as the equator of the lens is seen the capsule is grasped with a Voerhoeff capsule forcep and the lens is delivered by continuation of the pressure from below and with slight traction on the lens in order to rupture the few remaining zonula fibres. The moment the lens is delivered the lateral sutures are tied and again the coloboma of the iris is inspected The central suture is then placed in the distal flap and tied. Additional sutures can be placed in the conjunctiva if necessary to completely close the wound. Care should be exercised to completely cover the incision as it is a safeguard against infection. If for any reason irrigation of the anterior chamber is necessary it can be carried out under the flap. At this step the sutures of the lower lid and the superior rectus muscles are removed and eserine one-half of one per cent instilled in the conjunctival sac. If everything goes well we allow the bandage to remain forty-eight hours before dressing. If pain occurs within twenty-four hours following the operation and is not relieved by mild sedative such as empirin compound, the eye should be dressed immediately, and every twenty-four hours thereafter. Some operators only bandage the operated eye as it tends to prevent post-operative delirium. The patient is placed in the bed at an angle of thirty to forty-five degrees. This has greatly relieved post-operative restlessness. One very distressing symptom immediately following the operation is backache. This can be greatly alleviated by pre-operative enema, a well cushioned operating table, and a comfortable bed with adjustable back rest and early and frequent turning the patient in bed. Delayed filling of the anterior chamber is fairly frequent. It is usually due to a poorly coapted wound. The operative eye should be protected for at least twenty days with a shield to prevent possible injury.

Fig. 5.—Illustrates the method of applying Voerhoeff capsule forceps to the equator of the lens just as it presents in the wound. The central suture is used for traction and this gives the operator a direct view of the lens. Capsule forceps are applied accurately and deliberately.

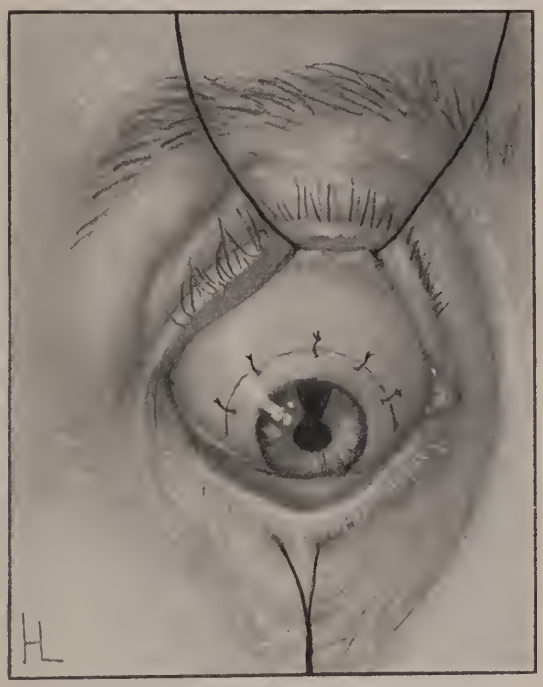

Fig. 6.—Illustrates the method of closing the conjunctival incision. As many sutures can be used as necessary to completely close the wound.

Advantages of the technique described are enumerated as follows:

1. By the use of the silk sutures in the lid and under the superior rectus muscle, we do not have to use an eye speculum, thus allowing the surgeon to close the eye quickly if it is necessary without removing the sutures.

2. You can always be assured of the conjunctival flap of the proper width extending the full length of the incision. In the presence of a flap it can be easily and firmly closed, greatly adding to the assurance of the operator. Even in the hands of the most skilled operators it is impossible to have a conjunctival flap made with a knife extending the full length of the incision. The sutures can be placed before making the keratome incision, certainly before performing the iridectomy. In placing the sutures we endeavor to include as much of the subconjunctival tissue as possible. We do not go through the cornea or the sclera. We find the sutures stay in place and have to be removed about the eighth day.

3. The incision with a keratome can be made accurately and there is no reason for injuring the iris, lens, or cornea. The incision heals just as efficiently and promptly when enlarged with scissors as it does with a knife. The scissors guide the incision and the iris is not disturbed.

4. Using a central suture for traction, the iris is brought clearly into view and an iridectomy can be done carefully and deliberately and the coloboma can be thoroughly inspected.

5. Through use of the traction suture the lens can be seen the moment it presents in the wound and the Voerhoeff capsule forceps can be placed accurately and deliberately, and is grasped at the equator. According to the measurements by Salzmann[3] the thickest part of the capsule is nearest the equator of the lens and thinnest near the lower pole.

6. By eliminating the eye speculum we do not have pressure on the globe and this certainly minimizes the possibility of the loss of vitreous. With this complication lessened the operator is much more at ease. Calmness at all times is conducive to better results.

7. With the entire wound completely closed we have a safeguard against infection and also against the possibility of prolapse of the iris.

8. The astigmatism with this type of incision in our experience has been one-fourth to one-half less than with the Graefe-knife incision.

9. Finally, we emphasize that this operation is not designed for speed but for safety and accuracy.

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711 S. Jefferson St.

More Penicillin for Army.

Work has begun on a five-story and basement reinforced concrete and brick factory and laboratory building for the Lederle Laboratories, Inc., at Pearl River, N. Y., according to plans prepared by the Chemical Construction Company. The Chemical Construction Company and the Lederle Laboratories are wholly owned subsidiaries of the American Cyanamid Company, one of the largest chemical and allied industry manufacturing concerns in America.

The general contract has been placed with the Turner Construction Company. The job has high priorities from the War Production Board and extreme speed is required in order to meet the Army's needs for Penicillin, the remarkable new drug which the armed forces need in large quantities.

MENINGOCOCCIC MENINGITIS TREATED WITH SULFADIAZINE*

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Much has been written pertaining to the administration of the sulfonamides in the treatment of "Meningococcic Meningitis", and it is not the purpose of this case report to bring out any new data but merely to emphasize certain salient points in the treatment of meningococcic meningitis with sulfadiazine.

Since its first appearance in epidemic form in this country in 1907-8 until 1936, spinal puncture and drainage, combined with the intrathecal injection of anti-meningococcal serum, had become the accepted method of treatment of cerebro-spinal fever. In the latter part of this period, however, workers became dissatisfied with their results and more intensive methods of administration were devised. Thus, large quantities of concentrated serum were given intravenously, intraperitoneally, and intramuscularly, while access to the cerebro-spinal circulation was sought by cisternal and ventricular as well as the earlier method of lumbar puncture. Various workers claimed by these methods to show improvement in limited series of cases.

On the other hand, many could claim no particular benefit by the adoption of these intensive methods, and from observations made by Alexander in London in 50 cases seen in 1932-1934, the conclusion reached was that no advance had been made on the previous practice, the case fatality being exactly 50 per cent.

That the treatment of meningococcic meningitis has been revolutionized, there is no question, that is, by the administration of the sulfonamides, especially sulfadiazine. No disease has gone through more radical changes in its management in the past few years than meningococcic meningitis.

There are, however, certain points to be remembered in the management of this disease that deserve emphasis.

1. Careful observation of the patient for purpuric spots either with a low or high temperature.

2. An early lumbar tap for diagnosis. No further taps are made until the patient is symptom free, at which time the tap should be done to be certain the fluid is clear and no cells present.

3. Prompt administration of sulfadiazine should be made intravenously, using the sodium salt and orally, the dosage being about one and one-half times that given in pneumonia. A second or third tap may be performed if there is reason to doubt the efficacy of treatment after a forty-eight hour trial period or if there are definite signs or symptoms attributable to increased intracranial pressure. Incidentally, procaine hydrochloride should never be used in doing a lumbar puncture.

4. Restore the fluid and alkaline balance as soon as possible by the administration of Ringer's or Hartman's solution and 5 per cent dextrose when necessary. At the onset of a severe meningococcic infection the hemoglobin often drops rapidly in which case blood transfusions are indicated.

5. Continue the chemotherapy until all symptoms have disappeared and the patient is temperature free.

6 and final point. Several days after treatment has been discontinued a spinal tap followed by three successive adenoid cultures at two day intervals should be made when, if negative for meningococci, the patient should be discharged.

CASE REPORT

B. A. H., white, female, 3½ years old, was admitted to the Medical College Hospital on March 10, 1943, at 10 P. M.

The patient was well until approximately one week before admission when she caught cold and developed a slight cough. Two days prior to admission she developed a hyperpyrexia associated with nausea and vomiting. She was given Empirin powders, but she did not respond. Approximately twenty-four hours before admission the mother noticed small purpuric spots, one on the eye at first and then they gradually scattered over the entire body. The fever and vomiting continued, associated with a severe headache. About three hours before the patient was brought in, she became irritable and the mother noticed stiffness of the neck.

*Read before the Richmond Academy of Medicine, May 11, 1943.

Physical examination revealed a well developed and well nourished child three and one-half years old, apparently acutely ill. Temperature 104.6° F., pulse 120, and respiration 30. There were many purpuric spots over the entire body, ranging in size from one millimeter to one centimeter in diameter. There was nuchal rigidity both to anterior-posterior and lateral movement. The throat was slightly hyperemic. There was a bilateral positive Babinski and Kernig. Abdominal reflexes were hyperactive but equal in response.

Complete blood work on admission showed white blood count of 22,800 with 86 per cent polymorphonuclears, 7 small lymphocytes and 7 large lymphocytes. There was an 82 per cent hemoglobin, 4,300,000 red blood count. The urine was negative except for positive acetone and 2-3 leukocytes. Spinal tap revealed the fluid to be cloudy and under increased pressure. The white cell count was 6,200 with 96 per cent polymorphonuclears and 4 per cent lymphocytes. There was a trace of globulin in the spinal fluid. Spinal fluid smear showed gram negative diplococci; one culture proved to be meningococci.

She was put on the following treatment: 37½ grains of sulfadiazine intravenously, 7½ grains orally, stat., and 7½ grains every 4 hours. Elixir phenobarbital, drams 1 every 4 hours, was ordered as a sedative, and 350 cc. of Hartman's solution was given subcutaneously. The child responded very well. By 8 A. M. the temperature had fallen to 99.6°, and the patient, while lethargic, was able to ask for necessities. She had another elevation of temperature to 102° the day following, but after that it remained normal throughout her hospital stay.

Another lumbar puncture was done on March 22. The fluid was clear and no cells were found. The drug was discontinued on March 17. There were no levels taken on spinal fluid. Adenoid cultures for meningococci on March 22, 24, and 26 were negative, and spinal fluid culture taken on March 22, was negative. There were no complications and no sequelae.

I wish to thank Dr. Chalkley and Dr. Grant for their cooperation and aid in the treatment of this case.

3103 Maury Place.

Hygeia Writer Warns of Tularemia Hazards For Rabbit Hunters.

"Every year an increased number of cases of tularemia occur during the rabbit hunting season. Persons who attempt to supplement their meat supply with wild rabbits during the coming fall and winter should inform themselves of the hazards," Thomas G. Hull, Ph.D., Chicago, declares in *Hygeia, The Health Magazine* for October.

Tularemia has been known as a clinical entity for twenty-five years, Dr. Hull says. Originally, it was thought that the infection was confined to the borders of this country, but later it was found to exist in many other parts of the world.

This is primarily a disease of wild rabbits, he continues, pointing out that "over 90 per cent of the human cases in the United States arise from this source. No human cases have been traced to rabbits raised under domestic conditions—not because such animals are immune but probably because they are free from the ticks which transmit the disease. . . .

"Cottontail rabbits are hunted for food chiefly during November and December. Since most cases of tularemia arise from this source, the winter months show a great increase in the incidence of the disease. . . .

"The best protection against tularemia is obtained by avoiding contact with infected animals. Hunters should avoid rabbits that are sluggish or refuse to run; such animals are sick and probably suffering from tularemia. Hunters, market men and housewives should wear rubber gloves, if possible, while skinning and dressing rabbits. The hands must be kept away from the eyes. Scratches and abrasions should be disinfected immediately. Care should be taken to wash the hands with soap and water after handling rabbits, even though only the fur is touched. The housewife should see to it that rabbit meat is cooked thoroughly to destroy any possible infection. . . ."

ROBERT HONYMAN, DOCTOR OF PHYSIC

MALCOLM H. HARRIS, M.D.,
West Point, Virginia.

In the annals of medicine and among the medical fraternity, many unique characters are found. In no instance is there one who sets himself apart in a more unique and eccentric manner than the subject of this sketch. There are a few facts known concerning his life worthy of preservation beyond his last will and testament, which is of so noteworthy character that it is appended to this brief account of his life. This instrument is worth reading. It demonstrates the old doctor's humanitarian instincts and his insight into the social welfare of his people. Of course, the clause which mentions the rib of James the Fifth as a legacy to his son, is the feature that has publicized the will in the past and labeled Dr. Honyman as an eccentric.

Robert Honyman was born in Kincardine, Scotland, in the year 1747. He was graduated from the University of Edinburgh and given the diploma of Doctor of Physic. For several years he served in the Royal Navy with the rank of Surgeon. He resigned his Commission in 1774 and came to Virginia. Probably through the influence of Scotch friends he settled first in Louisa County. He entered the Continental Army as a private soldier, but was soon promoted to the rank of Surgeon of a Regiment by General Scott.

The following statement of services rendered the family of Major Sam Ragland shows that he was engaged in practice in Louisa during the last of the Revolution.

Major Sam Ragland
to
Rob: Honyman

1780 Sept.		Dr. L	S	D
2	To a Visit, advice & attendance		-15-	
	To a Purge for self		1-6	
	To 3 Purges for Mrs. Ragland & Mifs Lucy		4-6	
	To 2 papers Febrifuge Antimonial powder		8-	
		1	-9-	

(On the back)

Sept. 15. 1780

Received of Major Sam Ragland payment of the within in full of all demands.

Rob. Honyman

Among the same papers was found the following directions for Major Ragland and in the same handwriting as the above:

Give the Major a Table spoonful of the Castor Oyl as soon as it comes, & if it does not work him in an hour repeat the same dose; & afterwards every hour till it works him. But as soon as it passes through him, give him no more. He should drink some broth to work it off. Tomorrow morning early apply a large Blister to the lower part of his neck. Give him of the Fever Mixture in the bottle a Table spoonful every 3 hours; if it does not help him loose in his body he should have a Clyster every evening. He may drink cold water, or wine and water, or wine wheys or Cyder whey or water with a little Cyder. But I think the most suitable drink is Broth of Ground Jug Tea with a little Salt Petre in it. If the wine heats him or affects his head, he must use it sparingly, & the quantity of wine should be regulated by the state of his pulse. If his fevers continue pretty high after taking the Oyl & drawing the Blisters & especially if his head is much affected, he should have Blisters applied to his legs. Two or 3 days hence if his fevers continue high & he complains much of his pains, he should take another gentle dose of Castor Oyl if his strength will allow of it.

Dr. Honyman first became a landowner in St. Martin's Parish, Hanover County, in 1788 or '89. In 1789, he was assessed on the land book with 179 acres, which he acquired from William Childress *et al.* In 1793, the same record shows that he had bought 249½ acres from George Brackenridge. In 1805, he added to these tracts of land 486 acres, which he bought of Robert Saunders *et al.* These tracts of land are described as adjoining the lands of Charles Thompson, James Doswell, and Roger Terrell, located twenty miles west of the courthouse in Hanover County.

In 1821, Dr. Honyman owned a tract of land consisting of 908½ acres, which was his home plantation, called Kinneff. In 1826, this land was listed for Dr. Honyman's Estate. The next year it was transferred to Mary P. Honyman, a resident of Louisa. In 1830, the land book shows that Mary P. Honyman had conveyed the plantation to Charles Y. Kimbrough of Louisa.

In 1832, Kimbrough sold these lands to Mr. Thomas H. Fox. The buildings were assessed at $1,500, the land at $10.55 per acre; the total tax paid amounted to $7.67.

Thomas H. Fox was a school teacher of promi-

nence in his day. He kept a diary which gives a contemporary account of the Honyman plantation and his ownership as follows:

"Mr. Charles Y Kimbrough offered (Mr. Fox) the farm formerly the residence of Dr. Honyman containing nearly 1,000 acres at a price which enable me to pay for it in cash. I purchased it and errected buildings suitable for my professional purposes. This was the fall on 1832; at the close of this year we moved to Slyvan Hill, the plantation I purchased and upon which I had errected buildings during the year. My school was very good for several years but the difficulty in getting to it and it's great seclusion did not suit for a boarding school. I therefore determined to dispose of it and in the summer of 1837 meeting with Mr. W. C. Winston in pursuit of a place I sold it to him."

Mr. Winston owned the land in 1850, described as lying on Little River. This plantation is now called Woodland. The bridge over Little River is called Honyman's Bridge.

At his death, his son, Robert Bruce Honyman, inherited this plantation. His wife, Mary Pottie, of Pottiesville, Louisa County, and he were married April 4th, 1821. He died shortly after his father, and his wife, Mary Pottie Honyman, married a second time October 27, 1828, Capt. Charles Y. Kimbrough. Capt. Kimbrough was a distinguished lawyer, legislator, and was the second president of the Louisa Central R.R. He died in 1844.

It was Mrs. Kimbrough who directed that the rib be cut in three pieces that each of her heirs might have a part. In recent years parts of this rib were still extant and guarded as a precious heirloom.

James the Fifth was the father of the unfortunate Mary, Queen of Scots, and the last King of his line to live in Scotland. It is not known how Dr. Honyman secured the rib, but likely it involved the questionable matter of securing anatomical material.

Dr. Honyman enjoyed an extensive practice in Hanover, Louisa and adjoining counties. He led an arduous life, for his work was done on horseback over roads that were near impassable in winter.

There was little known of his medical ability and surgical skill. Alexander MacCauley, who married a daughter of Francis Jerdone, wrote of Dr. Honyman's opinion to a friend who led an over-active life. He advised rest and retirement from business to lighter interests. He contributed medical essays to the medical publications.

Late in life he undertook the study of Italian, to round out a cultural experience not permitted to many men of his day. One of his books, with his name on the title page, is in the possession of the writer. It is an Italian poem, La Coltivazione Poema di Luigi Allemonni, published in London in 1780. He read Italian, Latin, Greek and French with love and pleasure. It is small wonder that the person who wrote his obituary labeled him as the best and most widely read man in Virginia.

The doctor had more than the usual business acumen of the medical profession. It was more in keeping with that implied to the hardy and provident race of his native Caledonia. He was a man of industry and frugality. His will shows that he had acquired a goodly estate, consisting of diversified investments.

His obituary, written within a month of his death, while on a highly eulogistic plane, shows that he was highly regarded by his contemporaries. So soon the legacy of a King's rib was noted by the correspondent that the *Enquirer,* on May 6th, 1824, quoted the clause!

WILL.

In the name of God Amen:

I, Robert Honyman, Doctor of Physic in Hanover County, State of Virginia, being at this time in my usual health of body & perfect soundness of mind, do make this my last will and testament, in maner and form following:

I give and bequeath to my son Robert Bruce Honyman, all the tract of land whereon I at present reside, containing about 900 acres more or less to him & his heirs forever.

I give and bequeath to my said son Robert B. Honyman my negro men Bob and John, my negro boy Lewis, my deaf and dumb negro woman Celia and her children, Mervin and Beck, and any farther offspring which the said Celia may have hereafter.

I give and bequeath to my said son two work horses, four work oxen, four cows and calves, 20 sheep and all my stock of Hogs, as also all my farming and kitchen utensils, all the furniture of my house, all of my books, excepting 10 volumes to each of my daughters such as they shall choose; also I give and bequeath to my said son my watch, my guns, all my medicines and surgical instruments, my microscopes, excepting my best microscope in a Shagreen case, which I give and bequeath to my dear daughter Cornelia Oldham. I also give and bequeath to my son my Thermometer, my diploma of Doctor of Physic, also a human rib which will be found in a small trunk in my chest, with my earnest request that he will carefully keep the said Rib (which is of James the Fifth, King of Scotland) & transmit it carefully to his descendents.

I will & bequeath to my son the proceeds of the collection of all the open accounts for medical services on my books or his books, as also all notes or bonds from persons for medical services only. It is my will and desire that all debts owing by me shall be paid speedily from the money which I shall leave at my decease, or from the collection of open accounts, or of notes or bonds for medical services, to be deducted from the foregoing bequest to my son. But if there shall be found after my decease more money which was in my possession than suffices to pay debts owing by me, it is my will and desire that such money shall be equally divided between my son, my daughter Jane Broaddus, my daughter Cornelia Oldham, and the children of my daughter Helen Nelson, Deceased.

If the whole or any part of my claim against Thomas Macon and the estate of Thomas Norvell shall hereafter be recovered. I give and bequeath to my son Robert Bruce one fifth part of the proceeds of such claim, and the residue to be equally divided between Jane Broaddus, Cornelia Oldham, the children of my daughter Nelson, and my daughter Catharine in the case that she fully recovers the use of her reason.

I will & desire that my personal property of every kind excepting the forementioned bequests shall be legally appraised, and afterwards divided equally between my daughters Jane Broaddus and Cornelia Oldham, and the children of my daughter Nelson, deceased, to them and their heirs forever; as also to my daughter Cornelia and her heirs, whom I have by mistake omitted in the second line above and have interlined; it being my will and intention that my said daughter Cornelia shall share equally with Jane Broaddus and the children of my daughter Helen Nelson, Deceased. But to make this division equally and justly, all the money or property which any of my daughters or their offsprings have received or shall receive in my life time shall be held and reckoned to constitute part of their respective shares of my estate, and the different shares shall be calculated accordingly an exact account of such money or property which I have given or shall hereafter give to my daughters will be found in a small paper book in a small Trunk in my chest, in which Trunk I keep my money & important papers.

But if my daughter Catherine survives me and recovers the perfect use of her reason, then and in that case it is my will that she shall receive an equall share of my estate with my other daughters or their offspring if deceased. But if she does not recover the perfect use of her reason I hereby give and bequeath Two Thousand Dollars for her use and benefit and comfortable support. The said Two Thousand Dollars to be placed at interest in private hand or in banks or in the funded.

Rob. Honyman (Seal)

(2) funded debt of the United States, and the interest thereof applied to her safe keeping, proper attendance & comfortable support to be managed by Trustees legally qualified for that purpose. The said Two Thousand Dollars to be deducked from my estate before a division takes place to my other daughters, or to the offspring of the deceased.

The Trustees of the above mentioned purpose to be designated by my Executors hereafter appointed, of which number of Trustees, I wish that my son Robert Bruce may be one, and that my daughter Catharine may remain with him, under his care and management.

By the expression, of my estate or property, I mean and intend everything in my possession at my decease, viz.; slaves, horses, stock of every kind, my 3 pr. cent stock of the funded debt of the United States, my Bank stock; Bonds for money lent to sundry persons or notes for money lent.

I judge that the fairest mode of dividing my estate and property among my Legatees will be to make the shares or portions as equal in value as possible and then my said Legatees to draw Lots for their respective share or shares.

To make my will clearly understood I direct that if any of my daughters shall die or have died before my decease or death, leaving issue, then and in that case the husband or widower of such daughter shall receive no more of my estate, or property than he has received before the decease of his wife, but that the full share of my estate or property that I leave shall be given to the children of my deceased daughter, to them and to their heirs.

In the division of my slaves among my children or their heirs, it is my will and desire that they should be divided among my legatees and not be sold, unless such division should separate husbands and wives at too great distance, and in that case it is my will that the husband or wife should be sold or hired out to such persons as may still render their connection convenient. Provided always that such person or persons who shall purchase or hire such slaves are known and esteemed persons of humanity and treat their slaves well.

It is my will and desire that my mulatto woman Ann shall not be appraised; and I would willingly emancipate her, but supposing that she would not desire her freedom on the terms prescribed by the law as it now stands. I therefore leave her to the care and humanity of my children, directing that she may live with whichsoever of them she chooses, and strictly and earnestly enjoining them to treat the said Ann with kindness and indulgence, particularly that they feed and clothe her in plentiful and comfortable manner, and make her work no more than she pleases.

In dividing the rest of my slaves it is my will, that no children shall be separated from their mothers under 8 years without the consent & willingness of their mother asked and obtained.

It is my will that my Island in James River above Richmond shall be sold on 12 months credit at such time as my Executors judge that it may be sold to advantage and the proceeds of such sale to be equally divided among my daughters and the offspring of such daughter or daughters as are deceased and I hereby authorize my Executors to make a compleat title to the purchaser of

said Island. In like manner I will and desire that my share or portion of a lot of land at Rocketts in Richmond, which I hold in partnership with Mr. William Nelson, Jr., shall be sold whenever Mr. Nelson and my Executors judge that it may be sold to advantage, and the proceeds of such sale to be divided equally as above directed respecting the proceeds of the sale of my Island in James River. And it is my will that until such sales shall be made, the rents of the Island and of the lot of land at Rocketts shall be collected by my Executors and equally divided among my living daughters & the offspring of those deceased.

In the lifetime of my daughter Lucy Broaddus I gave money and property to her husband, Rev. Andrew Broaddus, an account of which will be found in my paper book in a small trunk above mentioned. & now as my said daughter died without issue, it is my will and desire that one half of the amount of said money and property shall be allowed and held to constitute part of the share of my estate bequeathed to my daughter Jane Broaddus and the calculation of such share to be made accordingly. On farther consideration of the estate of my daughter Catherine, as it is possible that she may yet recover the perfect use of her reason, it is my will that instead of Two Thousand Dollars above mentioned I give & bequeth to my said daughter Catherine her full & equal share of my estate with my other daughters, or the offspring of those deceased: To be managed by Trustees as above directed: and the surplus of the interest or profit of such share which shall accrue after the expense of her comfortable keeping & support is deducted shall be allowed to accumulate & an exact account thereof to be kept by the Trustees, to be accounted for when they settle the account of their Trust.

It is to be understood, that it is my will that I retain the power of altering, adding to, annulling or cancelling any of the foregoing dispositions of my estate as it may seem proper to me.

Being little versed in the forms of law, it is possible that this my will may not be perfectly correct, though I have endeavored to express my meaning and intentions as clearly as I could, yet if my Executors or

Rob. Honyman (Seal)

(3) or legatees or either of them should have doubt, or scruples respecting the meaning and intent of any part or clause of this my last will and Testament or should judge it defective in any particular. I hereby empower and authorize my executors or any three of them to put such construction and explanation on the doubtful clause or clauses, or to supply the defective parts, so as to correspond with the general tenor of the will and agreeable to equal justice.

But if my Executors shall not agree among themselves on those doubtful or defective points or clauses, or if their decision or construction thereof shall appear unequal or unsatisfactory to my Legatees or either of them, then and in that case, it is my will that my Executors shall choose three impartial disinterested men, and my Legatee or Legatees who are dissatisfied shall choose two more men so quilified; and to those men the matter or matters in dispute shall be left to be decided and determined. And it is my will that the decision of a majority of those five men shall be final and conclusive as to the matter or matters in dispute. And it is my express will that those of my legetees who shall refuse to submit to or to abide by the decision of my Executors in the first instance or of the Referees above mentioned in the second instance but shall endevor to establish their claim by law, shall forfeit and lose all right and title to any part of my estate, excepting what they shall have received in my life time.

I hereby constitute and appoint Executors of this my last will and Testament my son Robert Bruce Honyman, my son in law Mr. Thomas Nelson, my son in law Dr. Samuel Oldman, my son in law the Rev. Mr. Andrew Broaddus; Mr. William Nelson; his son Mr. William Nelson, Jr.; Mr. Garland Thompson, Jr., and Mr. David Bullock of Richmond. Earnestly requesting that all, or as many of them as possible will qualify and act as Executors. Trusting that their trouble will not be great especially in the matter of discharging my debts, which is often the most difficult and irksome duty of Executors. Trusting also that they will act harmoniously and liberally. It is my wish and desire that my Executors, above mentioned, shall qualify and act as trustees for the care and comfortable keeping of my unfortunate daughter Catherine, and for the management of the share of my estate which I have devised to her.

This will is all written with my own hand on 3 pages; and on each page signed and sealed with my own hand in testimony of its authenticity this 22nd day of June Anno Dom: 1821.

Rob. Honyman . . . . . (Seal)

I hereby will and direct that those slaves which I have given in possession of my Daughters, their husbands or the offspring of my daughters deceased, or shall hereafter give during my life shall be held and accounted the property of my said daughters, their husbands or offspring of my daughters deceased, to them and their heirs forever, without the formality of a deed of Gift or bill of sale.

Signed and sealed this 10th day of April Anno Dom: 1822.

Rob. Honyman . . . . . (Seal)

Whereas my daughter Jane Broaddus is seperated from her husband Andrew Broaddus, I will and direct that the share or portion of my estate devised to my said daughter Jane in the foregoing part of my will, shall after my decease be lodge and vested in the hands of Trustees for the sole use, benefit and support of my said Daughter and in case of her death during her seperation from her husband & after my decease, that then the said share of my estate shall be lodged in the hands of Trustees or Guardians of her children by Andrew Broaddus for the use, benefit and support of the said children, till they come of age, and then to them or the survivors of them in full property.

But if my daughter Jane Broaddus is divorced from

her husband I will and direct that the share or portion of my estate devised to her in the foregoing part of my will shall after my decease be given to my said daughter in full property, to her & to her children by Andrew Broaddus: and I will that my said daughter Jane shall live and remain in my house as long as she pleases during her seperation from her husband, and after she is divorced from him as long as she remains in a state of widowhood and no longer.

Signed and sealed this 18th day of August Anno. Dom: 1822.

Rob. Honyman . . . . . (Seal)

I hereby nominate and appoint the following persons Trustees to receive and manage the share or portion of my estate which I leave to my daughter Jane Broaddus during her seperation from her husband Andrew Broaddus, viz.: Mrs. William Nelson, Jr., my son Robert Bruce, Thomas Owen, Garland Thompson, Jr., James Fontaine and Dr. Thomas B. Anderson.

Signed and sealed this 14th day of October 1822.

Rob. Honyman . . . . . (Seal)

Turn over to the next page.

On due consideration I think proper to nominate and appoint Executors of this my last will and Testament, and also Trustees for receiving and managing the share or portion of my estate which I bequeath to my daughter Catherine, as also the share or portion of my estate which I bequeath to my daughter Jane Broaddus while she remains in a state of seperation from her husband Andrew Broaddus the following persons, viz.: my son Robert Bruce Honyman, my son in law Dr. Samuel Oldham, Mr. William Nelson, Junior, of Louisa, Mr. Garland Thompson, Junior, Mr. David Bullock of Richmond, Mr. James Fontaine, Dr. Thomas Anderson: hereby revoking and cancelling all former nomination of Executors and Trustees, but still retaining the right and power of altering or adding to the above nomination hereafter at my discretion.

Signed and sealed this 25th day of October 1822.

Rob. Honyman . . . . . (Seal)

On due consideration I think proper to make some alteration in the foregoing parts of this my last will and Testament. I therefore hereby declare that it is my will that my son instead of the negro man John shall have my negro man Barnaby: and that my said negro man John shall remain at my present dwelling while the farm is kept up, or while my daughters, or either of them shall remain at my present dwelling; and that my said negro man John shall be allotted to the children of my daughter Helen in the division of my estate.

I likewise will and direct that all my household kitchen furniture and farming utensils shall remain at my present dwelling while the farm is kept up, or while my daughters or either of them remain at my said dwelling. And that after the death or departure of my daughters from my said dwelling, and the breaking up of the farm I will that all my household and kitchen furniture and farming utensils shall be appraised, and one half of the said articles to be given to my son, and the other half to my Grand daughter Mildred Owen, to her and her children, over and above her share of my estate as daughter of my deceased daughter Helen Nelson.

I give and bequeth one third part of my books to my son Robert Bruce; one third to Dr. Samuel Oldham, and one third part to my Grandson Robert Carter Nelson.

Signed and sealed this 18th day of July 1823.

Rob. Honyman . . . . . (Seal)

I hereby annul and cancel the article contained in the first page of this my will and Testament which relates to the relics of my brother John, and a bequest to my neice Mary Honyman, as it would be difficult if not impossible for my Executors to carry the said article and bequest into execution. I have therefore crossed it with my pen. Signed and Sealed this 5th day of April, 1824.

Rob. Honyman . . . . . (Seal)

At a Superior Court of law continued and held for Hanover County at the Courthouse, on Thursday, the 2nd of April, 1824:

This writing purporting to be the last will and Testament of Robert Honyman dec'd. and the Codicils thereunder written, were produced in Court by William Nelson, Junr., named in the body of the said writing, and James Fontaine named in one of the said Codicils as Executors: and Pleasant Terrel, Robert H. Nelson and James Byars being sworn and examined, declare that they are well acquainted with the hand writing of the said Robert Honyman dec'd. and believe that the said will and Codicils were wholly written by the said deceased, and that the signatures to the said will and Codicils were also written by the said deceased; whereupon the said will and Codicils are ordered to be recorded. And on the motion of the said Executors a certificate is granted them for obtaining a probat of the said will and Codicils, they having performed what the law in such cases requires. Liberty being reserved to the other Executors in the said will and Codicils named to join in the probat thereof, when they shall think fit.

Teste:

Thomas Pollard C.C.

A copy teste:

Thomas Pollard C.C.

A copy teste:

C. W. Taylor, Clerk.

As far as known there was no marker placed over the grave of the doctor. In fact, no one knows the spot where he was buried. After a hundred years his peculiar legacy of a king's rib has preserved him from the usual oblivion of time. His will shows his interest in the welfare of his people and intent to provide for them to the extent of the law. He was above all a Doctor of Physic and Surgeon.

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Bethune International Peace Hospital in China.

The Bethune International Peace Hospital, operating in China's guerilla Northwest Territory, has been forced to move three times this year, according to a recent report from Mme. Sun Yat-sen to China Aid Council of United China Relief. This hospital was driven out of its former permanent base at Wutaishan, in northern Shansi Province, in 1941, and since then has always been set up close to the fighting fronts, defying the sporadic Japanese mopping-up campaigns. Mme. Sun's report gives the hospital's present location as western Hopei Province, where it operates in scattered mud and brick peasant huts. This province is nominally "occupied" by the Japanese.

During the past six years, several International Peace Hospital doctors and nurses have lost their lives, but it is the boast of the hospitals' staffs that to date no patient has been lost or abandoned to the enemy. This record is in part due to the volunteer-assistance of a permanent organization set up by the local peasants in the Northwest and placed at the disposal of the guerilla armies and the four International Peace Hospitals. When approaching Japanese make hospital evacuation necessary, all resources of the surrounding villages are mobilized: horses, carts, carriers and stretcher bearers. Accompanied by nurses, the "convoys of wounded" are carried by primitive stretchers in relays from village to village. Branches of the peasant organizations meet them at each stop.

Village peasants also give valuable aid to the mobile medical and surgical units which go to within one half-hour's travel from the scene of fighting. Peasants help doctors to prepare operating arenas, set up sterilizing equipment, and to build temporary matsheds to shelter the wounded. Women in the villages set up food kitchens and prepare dressings under the trained nurses of the medical unit.

Mme. Sun's report to the Council points out that more medical and surgical units are urgently needed. In the last period of active fighting, one mobile unit serviced three regiments, and handled as many as 300 cases of wounded a day. Mobile units can be maintained for $600 a year.

United China Relief, which financially aids the International Peace Hospitals, is a member agency of the National War Fund.

Winthrop Erecting New Building.

A new $75,000 building to be devoted exclusively to the production of plasmochin, an antimalarial, is being constructed by the Winthrop Chemical Company at Rensselaer, New York.

The new plasmochin building, which will begin operating November 15, is one of 26 manufacturing, laboratory and office buildings operated by Winthrop in Rensselaer. For the production of penicillin a building outside the factory grounds was recently leased, where operations will begin shortly.

The president, Dr. Klumpp, stated that the new building is part of an "ambitious program of enlargement of existing manufacturing and research facilities" and, after the war, further enlargement of laboratory facilities and the erection of a three-story office building are contemplated.

CEREBRAL AND BASAL GANGLIA DEGENERATION DUE TO ANOXIA SECONDARY TO ANESTHESIA—CASE REPORT*

WILLIAM DURWOOD SUGGS, M.D.,
Richmond, Virginia.

Mrs. C. A. T., age 32, para II, was hospitalized with a diagnosis of pregnancy 12 weeks, incomplete abortion. A few days earlier a complete diagnostic survey by an internist had been essentially negative. On admission, patient gave a history of moderate vaginal bleeding for three days, followed by rather free bleeding, with passage of clots, a few hours before hospitalization. Examination was essentially negative except for moderate vaginal bleeding. Blood pressure 110/75, temperature 96, pulse 120. A blood count revealed 4,350,000 red blood cells, 66 per cent hemoglobin, 13,100 white blood cells, with a normal differential spread. The patient could not be considered to be in shock. Immediate preparations were made to evacuate and pack the uterus. Preliminary medication consisted of nembutal gr. III, morphine sulphate gr. 1/6, atropine sulphate gr. 1/150. The operating room record of the patient's condition, prior to induction of anesthesia, records temperature 98.6, respiration 18, blood pressure 110/72, and the general condition described as "good". The record reveals the duration of the anesthetic to be 15 minutes, the duration of the operation 10 minutes. Nitrous oxide and oxygen was the anesthetic agent employed. The induction stage was described as "somewhat stormy". While packing the vagina at the completion of the operation, it was noticed that the patient had an involuntary stool. This was thought to be due to the packing procedure, but it prompted a question to the anesthetist regarding the patient's condition. The anesthetist replied that the condition was satisfactory; however, it was noted that the patient was not breathing. The anesthetist observed that respiration had been normal until that moment. There was no cyanosis or pallor; the pulse was strong and full. Artificial respiration, combined with oxygen inhalation, was started immediately and various respiratory and cardiac stimulants were administered. The patient was in a condition of apparent respiratory paralysis. It was perhaps one hour before any voluntary respiratory effort reappeared, slow at first, but gradually increasing to 12-14 per minute. During this period the pulse rate and quality, as well as blood pressure fluctuated greatly. However, she was never cyanotic. The patient was then removed to her hospital bed and oxygen administered through a B.L.B. mask. Her pulse, blood pressure, and respiration remained fairly stable during the next three hours, until she had a

Microphotograph (X 100) showing absence of glial cells in subcortical area of cerebrum.

spastic convulsion involving the entire body, at which time the systolic pressure rose from 108 to 148. These convulsions recurred several times at varying intervals. Consciousness was never fully regained, but a condition of life developed in which the eyes were kept wide open, roaming about the room. Respiration was irregular and at times of Cheyne-Stokes character, and the face was flushed except for short periods of apnea. Apparent efforts were made at speaking, which, though audible, were never understandable. During spells of spasticity, blood pressure would rise to 150-160 systolic, the

*Read before the Richmond Academy of Medicine, April 13, 1943.

arms being extended, hands pronated, and neck and limbs extended. The deep reflexes, which had been absent during the first 24 hours, returned and were exaggerated. The Babinski, which was present at first, later disappeared. The action of the bladder, but not the rectum, was involuntary. Nourishment (2,000 cal.) and fluid intake was maintained through a stomach (Juette's) tube. During this period the patient was seen by various internists and neurologists, including Drs. Wallace Blanton, Porter Vinson, C. C. Coleman, and Gayle Crutchfield. Spinal puncture, blood chemistry, hematological, urinary, eye ground, and other studies were inconclusive, or normal. The temperature was generally elevated between 101-103 and pulse between 110-140. The patient lived in this static state above described for 41 days.

The Generative Organs

The general autopsy was performed by Dr. Regena Beck and the postmortem examination of the brain by Dr. Paul Kimmelstiel. Only the pertinent postmortem findings are here described in detail.

The Generative Organs

The pelvis is grossly normal. There is no evidence of an inflammatory process. The uterus, cervix, tubes, and ovaries are removed for study. Their combined weight is 68 grams.

The tubes are patent and normal in appearance. Microscopically they do not show any evidence of any pathological process.

The ovaries each measure 3 x 2 x 1 cm. They appear normal. There are no cysts present. *Microscopic study* shows normal ovarian tissue.

The *uterus* and *cervix* weigh 52 grams. They mesaure 5.5 x 6.5 x 1.5 cm. Gross section shows normal myometrium.

There are no fibromyomas nor any other gross pathology. *Microscopic study* shows that the endometrium has not regenerated; there are only a few sub-basal glands present. There is no evidence of an inflammatory process. The myometrium is normal. The blood vessels show moderate thickening of the intima.

Microscopical Description of Brain

"Brain: The brain was fixed in 10 per cent formalin for approximately three hours. Blocks were then taken from various portions and placed in 95 per cent alcohol.

"Histological sections revealed pathologic findings to be most prominent in the cortex. Nisel stained sections show extensive degenerative lesions of the ganglion cells varying in severity with different regions of the cortex, being most prominent in the parietal lobe. Degenerative lesions of the ganglion cells are seen either scattered or in the form of patchy areas, or involved to a certain extent, but unquestionably the 3rd, 5th, and sometimes the 6th layers are most prominently involved. Acute swelling of ganglion cells is only rarely encountered. Occasional vacuolic degeneration of ganglion cells is seen with irregularly arranged tigroid substance and degenerative changes of nuclei. The most frequent change is ischemic necrosis in which the tigroid substance has disappeared and the cytoplasm appears slightly pinkish, homogenous. The nucleus very frequently undergoes karyolysis; pyknosis is only infrequently encountered. Shrinkage of the ganglion cells is likewise seen. The cells appear to be small, narrow with reduced cytoplasm; the tigroid substance is broken up into fine granules which are gradually disappearing. The cell fades away and is finally reduced to a shadow. Nuclei undergo various types of degenerative changes. Calcification or dark stained cytoplasm is not seen in the cortical ganglion cells. In places there is very little, in others very marked glial reaction. Extensive scars have developed, particularly in the 3rd layer composed of swollen, sometimes degenerated, proliferated glial elements of the various types. Micro- and macroglia both are very active. Red cells (microglia) participate to a great part in the process of scarring. The scars are rather vascular.

"Basal ganglia and mid brain are only moderately involved in the form of scattered, degenerated ganglion cells, most frequently without, sometimes with, glial reaction and neurophagia. The latter is most prominently seen in the pons.

"The cerebellum reveals extensive degeneration of Purkinje cells, which have completely disappeared in certain areas. The granular and molecular layers are intact.

"The Ammon's horn shows only few scattered degenerative ganglion cells. They are practically free from changes.

"The white matter reveals swelling of oligodendroglial cells; otherwise negative.

"Vascular changes are absent with the exception

of a few calcified vessels in the basal ganglia. There is no inflammatory reaction.

"The meninges are essentially normal."

PATHOLOGICAL DIAGNOSIS

General dehydration.

Pulmonary abscess in lower right lobe posteriorly.

Congestion of the spleen.

Moderate parenchymatous degeneration of the liver.

Moderate parenchymatous degeneration of the kidneys.

Cerebral and basal ganglia degeneration.

Monument Avenue and Lombardy Street.

Birth Control Acceptance at New High.

A recent poll of American women on the subject of birth control in the August issue of *Fortune* Magazine, shows one of the highest affirmative responses ever registered in this country on a health issue.

Of the women questioned throughout the country to "Do you believe that knowledge of birth control should, or should not be made available to all married women?" 84.9 per cent answered affirmatively, 10 per cent said the information should not be made available, and 5 per cent replied, "Don't know".

The *Fortune* poll showed further that women in three categories voted "yes" to the question, as follows: Catholic Women, 69 per cent; Grammar School Graduates, 70.2 per cent; and College Graduates, 92.6 per cent.

The Planned Parenthood Federation of America, Inc., 501 Madison Avenue, New York, which has maintained a record of all previous public opinion polls on birth control, issued a statement that the current *Fortune* poll marked the highest response thus far registered in favor of conception control.

The Nursing Division of Procurement and Assignment Service

Announces the following program: The Red Cross recruitment committees are pledged to recruit 36,000 nurses this year. The new division will (1) determine the availability for military service or essentiality for civilian service of all nurses eligible for military service and submit such determinations to the American Red Cross for use in procurement of nurses for the Armed Forces; (2) promote plans for maximum utilization of full-time nurses and those who are able to serve only part time; (3) develop and maintain a roster of all graduate registered nurses, and (4) develop and encourage sound methods of supplementing the work of nurses with non-professional personnel.

Through the War Manpower Commission, nursing will not only have the benefit of the experience of medicine in the procurement and assignment of physicians, but means will be found to interpret wartime nursing to physicians and their cooperation secured in effecting desirable wartime adjustments.

It is interesting to note that the number of nurses graduated in the past two years is well in excess of the number withdrawn for military service.

REPORTS FOR 1943 ANNUAL SESSION MEDICAL SOCIETY OF VIRGINIA

The Council

The regular winter meeting of the Council was held on January 22, 1943, minutes of which appear on pages 158-160 of the March MONTHLY. Minutes of a special meeting held on June 25 appear on page 465 of the September MONTHLY.

Executive Secretary-Treasurer

A large amount of detail work has, as usual, required the attention of this office during the past year. The membership as of September 15, 1943, was 1,932, a gain of twenty over the 1942 report. There have been added 78 new members and 3 reinstatements. The losses include 37 deaths, 15 resignations, and 9 dropped as lost or for delinquency in dues. The Procurement and Assignment Service for Physicians advises that more than 525 doctors have entered the armed services from Virginia. The names of 356 members are included in this list, though there may be others whose names have not been reported to this office.

The number of component societies remains 48, representing 91 counties and one city.

Col. Walter B. Martin, M.C., and Dr. J. M. Hutcheson, regularly elected delegates, represented this Society in the House of Delegates of the American Medical Association.

The President, Dr. Emmett, appointed Dr. O. B. Darden as a fraternal delegate to the meeting of the Medical Society of the State of North Carolina, Dr. Fred P. Fletcher as the Society's representative on the board of trustees of the Virginia War Fund, and Dr. A. P. Jones to attend the public hearing of the legislative commission appointed to study the question of workmen's compensation for occupational diseases.

It is a pleasure to announce that the Medical Society of the State of North Carolina has appointed four delegates to attend this convention and we hope the full number may be present.

The accounts of the office will be audited at the end of the financial year (September 30) and, the report presented to the Council at the Roanoke meeting, will be published with the minutes of this session.

AGNES V. EDWARDS,
Executive Secretary-Treasurer.

Delegates to the American Medical Association

The House of Delegates of the American Medical Association met in Chicago, June 7 to 9, 1943. The atmosphere of this meeting was quite different from that of any in recent years. Absent was the throng of physicians and visitors from all over the country. Gone also was any element of strife or contentiousness. The atmosphere of the House was one of gravity and concern. The feeling prevailed that nothing of a controversial nature should be allowed to divert our minds from the consideration of those problems connected directly with the prosecution of the war or arising as the result of the war.

The attendance at the meeting was exceptional. Only the delegates from the Philippines, Alaska, Panama and Puerto Rico were absent.

Of first importance was the report of the Board of Trustees dealing with the relationship of certain special types of medical service, such as x-rays and clinical pathology and the prepayment plans for hospital service. This exhaustive report, as published in the *Journal of the American Medical Association,* is well worth careful study and your delegates concurred in their conclusion that local conditions vary so widely that it is unwise and impractical to attempt to define a national policy on this matter.

Of the greatest importance was the establishment of a council on medical service and public relations. This council will fill a long felt need and will combine the functions of the Bureau of Medical Economics, the Department of Public Relations and the Bureau of Legal Medicine and Legislation. The personnel of this council is distributed on a geographical basis and we feel that it promises much in the way of constructive development in the field of medical care.

The House of Delegates also placed on a permanent status the committee on the planning of post-war medical service, under the chairmanship of Dr. Roger I. Lee.

Of outstanding interest was the address before the House of Delegates of the new Surgeon General of the Army, Major General Norman T. Kirk. General Kirk had just returned from inspection of medical facilites on the African front. He spoke with force and feeling of the devotion and skill of the medical forces operating in that area.

His many friends and admirers in Virginia will be especially pleased to note that the Distinguished Service Medal was awarded this year to Dr. Elliott P. Joslin.

In accordance with previous arrangements, it is anticipated that the House of Delegates will meet in New York City in 1944.

WALTER B. MARTIN
J. MORRISON HUTCHESON
Delegates

Publication and Program

By strict economy of the available time, your Committee this year has been able to use all the papers submitted, without having to resort to sectional meetings in the program at Roanoke. This will give everyone an opportunity to hear every paper and take part in the discussion if he wishes. The guests speakers will give the latest medical news from the front.

We have been able to go through the year without cutting down on the size of the MONTHLY, and we have adhered to the high standard that was set by our pre-

decessors. We are also gratified to report that there has been no curtailment in the advertisements. Several minor changes in the make-up have been made in order to improve the appearance of the journal. The Committee has received a number of complimentary letters about your magazine. We deeply appreciate these. If there are any of the other sort, the Committee would like to have them also. After all, the MONTHLY is your magazine and the Committee wants it to suit you.

WYNDHAM B. BLANTON
J. EDWIN WOOD, JR.
M. PIERCE RUCKER, *Chairman.*

Scientific Exhibits

As you can readily anticipate, it is well nigh impossible to secure any number of scientific exhibits for the coming meeting.

Those who previously were frequent exhibitors are unable to spare the great amount of time needed to get together data for exhibits or are in the service.

The only scientific exhibits scheduled for our October meeting are as follows:

Activities of the State Health Department, I. C. Riggin, M. D., and J. C. Funk, Ph. D., Richmond.

Correlation of the Physician and the Bacteriologist, Frederick W. Shaw, M. D., and F. J. Goodfelt, M. D., Medical College of Virginia, Richmond.

The Nerves of the Female Genitals, Randolph H. Hoge, M. D., and Louise Jones, Technician, Medical College of Virginia, Richmond.

Uterine Bleeding, William Bickers, M. D., Richmond.

Carcinoma of the Larynx and Certain Lesions of the Esophagus, F. D. Woodward, M. D., and M. K. Humphries, M. D., Charlottesville.

W. W. S. BUTLER
M. L. DREYFUSS
W. AMBROSE MCGEE, *Chairman.*

Department of Clinical and Medical Education

INSTITUTE ON INDUSTRIAL MEDICINE

The major undertaking for the past year was the Institute on Industrial Medicine conducted in cooperation with the Committee on Industrial Health. Dr. Fred J. Wampler, Chairman of that Committee, suggested topics, speakers, and localities in which there seemed to be a potential interest in the subject of Industrial Medicine. The Executive Secretary then made arrangements with the component societies, secured the speakers and gave publicity to the program.

It was believed that the Tidewater area would be the best part of the state to conduct the Institute since both industry and doctors were more densely settled there and since the problem of transportation might present serious difficulties elsewhere. Since some of the outstanding speakers would have to cover a considerable distance and at considerable expense it was thought wise to arrange a five-day Institute which would meet at a different place each day. Accordingly, arrangements were made to hold meetings at Newport News, Norfolk, Portsmouth, Suffolk and Petersburg. The following component societies agreed to sponsor the meetings:

Virginia Peninsula Academy of Medicine.
Warwick County Medical Society.
Elizabeth City County Medical Society.
Norfolk County Medical Society.
Portsmouth Medical Association.
Nansemond County Medical Society.
Fourth District and Southside Virginia Medical Society.
Petersburg Medical Faculty.

The original plans called for an afternoon session, a dinner session, and an evening session in each of the five cities. The societies on the peninsula, however, felt that the doctors were too busy for such an extended program so only the dinner meeting was held in Newport News. In Norfolk it was impracticable to arrange to feed a large group under existing food rationing and crowded hotel conditions, but an afternoon meeting and an evening meeting were held there. In the other three cities the full three-session program was held. The full program indicating variations made to meet local conditions was printed in the May 1943 issue of the VIRGINIA MEDICAL MONTHLY. It might be mentioned here, however, that the following topics were discussed:

Industrial Medicine Today.
Compensation.
Trauma—Shock and Burns.
Tuberculosis Program in Industry.
Occupational Dermatoses with Special Reference to War Industries.
Medical Services of the United States Navy in World War II.
Treatment of War Wounds.

The following speakers appeared on the programs:

Dr. Orlen J. Johnson, Field Secretary, Council on Industrial Health, American Medical Association.
Dr. W. L. Weaver, Medical Director, Du Pont de Nemours Co., Ampthill Plant.
Dr. John E. Dunn, P. A. Surgeon, Dermatoses Investigations Section, U. S. Public Health Service.
Dr. H. U. Stephenson, Medical Advisor, Industrial Commission of Virginia.
Dr. I. A. Bigger, Surgical Staff, Medical College of Virginia.
Dr. E. C. Harper, Director, Tuberculosis Control Program, Virginia Department of Health.
Commander B. W. Hogan (M.C.), U. S. Navy, recently Senior Medical Officer, U. S. Navy Carrier *Wasp.*
Dr. H. S. MacLean, Chief Medical Officer, Virginia Electric and Power Company.
Colonel Parke P. Deans, Chairman, Industrial Commission of Virginia.
Dr. M. J. Hoover, Surgical Staff, Medical College of Virginia.
Dr. J. M. Meredith, Surgical Staff, Medical College of Virginia.
Dr. James T. Tucker, Surgical Staff, Medical College of Virginia.
Commander J. M. Deaver (M.C.), U. S. Naval Hospital, Naval Operating Base, Norfolk.

Each society reported that the program was very interesting, instructive and worth while. The secretary of the Virginia Peninsula Academy of Medicine reported that "the subject matter was too limited to the majority of doctors who are not doing any industrial work in this area. It seems that the meeting would be more profitable if held solely for the men doing industrial medicine." It was generally agreed, however, that under present conditions the program was too long for the doctors who are working under wartime pressure. It was suggested that future programs be confined to a dinner and evening session. The attendance at Newport News was 55, at Portsmouth 20 and at Petersburg 40. No accurate report was obtained from Norfolk, where the attendance was poor, or at Suffolk, where speakers reported it was very good.

Dr. Orlen J. Johnson made the following suggestions for future Institutes:

1. Better local organization established, primarily a committee on industrial health of the local medical society.
2. That industrial organizations be asked to cooperate or participate in the programs.
3. That the services to be obtained through the Bureau of Industrial Hygiene of the Virginia State Health Department be given a more prominent place.

Dr. Wampler, Chairman of the Committee on Industrial Health, has indicated that he considered the Institute a success and is considering with other members of his Committee the possibility of holding similar Institutes in other parts of the state.

In addition to the program above, assistance was given the Clinch Valley and Wise County Medical Societies in obtaining a speaker on Industrial Medicine for its program at Norton in April.

Proposed Postgraduate Course on Cancer Control

Dr. Edwin P. Lehman, Director of the Virginia Cancer Foundation, has asked that the Department of Clinical and Medical Education cooperate with that organization in conducting a statewide program of postgraduate instruction in cancer for the doctors of Virginia. The Virginia Cancer Foundation has appropriated $1,500 to be used for this purpose. It is proposed that the program be planned in the near future but that it not be put into operation until after the war. In the meantime, Dr. Lehman requests that the Medical Society of Virginia be asked to appropriate as large a fund as possible to assist in this program and to cooperate in requesting a subsidy from the Commonwealth Fund similar to that granted for the Prenatal and Postnatal Program of 1932-1934. If the Department of Clinical and Medical Education will get a pledge of a definite appropriation for this purpose from the Medical Society of Virginia, a request can then be made of the Commonwealth Fund for a grant to help in the cancer program. This pledge is desirable as evidence to the Commonwealth Fund that the Medical Society of Virginia will give moral and material support to the program.

Prenatal Examination Cards

For a period of about ten years the Department has been distributing to doctors throughout the state Prenatal Examination Cards of standard size (5" x 8") for keeping a permanent record of case histories. As long as the original supply lasts this practice will be continued. During the past year about five hundred of these cards have been furnished to general practitioners requesting them.

Annual Budget

A financial statement for the current year is attached. This indicates that an appropriation of $600 was made by the Medical Society of Virginia to the Department of Clinical and Medical Education and that $369.30 of this is to be returned at the end of the year. Since it is not likely that demands will be heavy for the coming year, it is recommended that an appropriation of $600 be requested from the Medical Society of Virginia.

GEORGE B. ZEHMER,
Executive Secretary.

Financial Statement

Receipts and Disbursements

August 2, 1942—July 27, 1943

Receipts

Aug. 1, 1942—Balance on hand	$ 86.55
Apr. 6, 1943—Medical Society of Virginia	600.00
	$686.55

Disbursements

1942:	
Oct. 12—J. A. Rorer (travel Roanoke meeting)	$ 6.95
1943:	
Feb. 11—Western Union	1.06
Feb. 11—Extension Division (use of car)	10.25
Feb. 11—J. A. Rorer (travel, Norfolk, Newport News, etc.)	11.85
Mar. 18—University Press (programs)	42.00
Mar. 22—Extension Division (stamps)	15.00
Apr. 6—Dr. W. L. Weaver (travel)	27.77
Apr. 12—Com. B. W. Hogan (travel)	3.00
Apr. 12—Western Union	1.76
Apr. 9—Dr. J. M. Meredith (travel)	8.85
Apr. 12—Dr. F. J. Wampler (travel)	17.50
Apr. 16—Dr. M. J. Hoover (travel)	4.86
Apr. 26—Wise County and Clinch Valley Medical Societies (program speakers' travel)	25.00
July 26—Extension Division (secretarial services)	50.00
July 26—Extension Division (telephone)	4.85
July 27—Trout Fund for Negro Education, to be retained	86.55
July 27—Balance to be refunded to Medical Society of Virginia	369.30
	$686.55

Legislation

Your committee has had numerous meetings which have been chiefly taken up with the matter of protecting the health of our people.

In the spring we were asked by the Healing Arts Commission to appear before them to give them such information as they might require. Your committee had representatives from the various departments of the State and from the medical profession to appear before the said commission. These representatives included the Commissioner of Public Health, the President of the State Medical Society, the Secretary of the State Board of Medical Examiners, professors from the medical schools and representatives from the Department of Education. We spent an entire day before the Healing Arts Commission, attempting to give them the information they desired.

This commission is to report to the next meeting of the Virginia State Legislature, and I am sure they will make recommendations. Of course we do not know what these recommendations will be, but I am afraid they will not be for the welfare of our people.

During the past summer, we wrote letters to physicians in each of the one hundred counties of the State, asking them to interview their prospective members of the legislature in behalf of medical education and the health and welfare of the people. We regret to say that the response to these letters was very feeble. If the doctors are interested in this problem, they have certainly not demonstrated the fact by their response.

Your committee would urge each member of our profession to show a greater interest in the activities of the so-called "Healing Arts". Otherwise, we are going to be put in a very unfavorable position at the next meeting of the Legislature.

Personal interviews by immediate friends of our individual legislators are probably the best way to accomplish our results. It must be done in a quiet way; otherwise the whole purpose of our efforts will be defeated.

G. COLBERT TYLER
J. M. HUTCHESON
C. D. NOFSINGER
B. F. ECKLES
JAMES P. KING
DEAN B. COLE
W. D. KENDIG
A. F. ROBERTSON, JR.
FRANK S. JOHNS, *Chairman.*

Medical Economics

The Committee on Medical Economics has had nothing reported to it for consideration during the year and has no report to make.

GUY R. FISHER, *Chairman.*

Membership

This committee has had no application for membership referred to it during the past year, all new members having joined through component societies. The MONTHLY has carried notices of the deaths of members, and their names will be read at the annual meeting.

We take pleasure in recommending for honorary membership the name of Dr. J. M. Emmett, our retiring president.

D. M. KIPPS
G. F. SIMPSON
J. BOLLING JONES, *Chairman*

Ethics

As no matter has been referred to this Committee for consideration, we have no report to make.

R. L. RAIFORD
T. K. MCKEE
I. C. HARRISON, *Chairman.*

Judicial Committee

This Committee has nothing to report.

P. ST. L. MONCURE, *Chairman.*

Advisory Committee to Woman's Auxiliary

As chairman of the Advisory Committee to the Woman's Auxiliary, I wish to submit my report of suggestions made and accepted by the Auxiliary.

First: That each local Auxiliary compose an Honor Roll of the doctors who are in service from each community, which will be submitted to local medical staff, also the same to be forwarded to the State Auxiliary and a State Honor Roll be compiled, which will be published in the VIRGINIA MEDICAL MONTHLY.

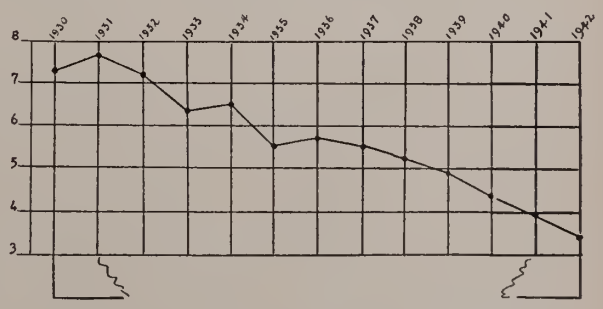
Second: That the State Auxiliary recommend that a chairman be appointed in each local Auxiliary to cooperate with the Medical Director of Civilian Defense.

Third: The State and local Auxiliaries encourage the sale of War Savings Stamps and Bonds.

W. E. BUTLER, *Chairman.*

Report of the Committee on Maternal Health

The highest number of births, 65,004, in the State's history was recorded during the past year. This was accompanied by a maternal death-rate of 3.3, the lowest recorded in the State's history. It is generally accepted that an increase in the birth-rate accompanies war. The factors responsible for the decrease in the maternal death-rate are the same in peace as in war. The consistent decline in the maternal death-rate in Virginia, since 1936, is shown in the accompanying chart.



Attendance at prenatal clinics has remained unexpectedly high. In defense areas there has been a decrease due to the ability of these patients to pay private physicians; in other areas some clinics have shown an increase in at-

tendance. Restricted transportation facilities and the increased demands made on physicians have been contributing hazards in the maintenance of clinic services. Maternal visits to clinics during the past year totaled 33,416 as compared with 37,805 for the previous year. It is encouraging to report that most of the clinics have been able to survive.

In the report of the previous year the Maternal Health Committee favored a demonstration plan for the hospitalization of the indigent maternity and infant patients with abnormal conditions. These patients were from a selected rural area and hospitalization was provided through funds administered by the State Department of Health. The Committee expressed the hope that this agency "find more funds for the further extension of such work". The State Department of Health, through its Bureau of Maternal and Child Health, has been able to extend the hospitalization plan to include all areas of the State except cities of the first order. During the nine months in which the plan has been in operation 459 patients have been hospitalized, of which 310 were obstetric with a wide variety of complications. The program is being continued with the indorsement of this Committee, for it is felt that the results obtained justify its continuation.

The review of maternal deaths by the Committee has been continued, in spite of the difficulties incurred by the present emergency. The policy of reporting a case in each issue of the VIRGINIA MEDICAL MONTHLY is being followed. Comments about these cases are not intended as criticisms of individuals but rather with the idea of calling attention to generally accepted methods of treatment. Evidence has been accumulated to show that these reports are being read. Reprints of the reports have been made available by the Bureau of Maternal and Child Health of the State Department of Health and may be secured on request.

It is realized that the present downward trend in the maternal death-rate cannot be continued indefinitely but the Committee feels that an effort should be made to keep this rate at a minimum.

The Committee requests that the same appropriation for postage and incidentals be made for next year.

C. J. ANDREWS
A. M. GROSECLOSE
E. B. KILBY
J. A. OWEN
M. P. RUCKER
H. H. WARE
T. J. WILLIAMS, *Chairman.*

Child Welfare

Virginia continues to carry on with its Child Welfare program despite the war. Nevertheless its efforts are seriously handicapped.

Extension of full time health units to all the counties of the state is temporarily held up by the lack of personnel. Fifty-one counties now have health departments serving a population of 1,422,373 or 68 per cent of the rural population. Amelia and Campbell Counties have made appropriations for county health departments but inability to secure personnel has held up the inauguration of services.

The legislative provision for extension of mental hygiene clinics is slowly getting under way with some seven part-time clinics radiating from the Southwestern State Hospital and under the direction of Dr. Jos. E. Barrett, Director of Mental Hygiene Clinics. These will be further increased as personnel becomes available.

With the ever increasing number of mental defectives, the increase in the number of criminal insane and the increased demand for facilities for the care of these classes the State is facing a steadily growing problem of social and financial responsibility. The legislature recognized this and at its last session made provision for an eventual alleviation of the situation. By legislative direction the State Department of Public Welfare has extended its child placing efforts to all the major political units (county and city) of the State. This has facilitated the prompt placing of dependent children and is a distinct step forward.

The large amount of defense work going on in Virginia has increased greatly the responsibilities of the State Department of Health. The situation has been met with a remarkable degree of success. No epidemic of major proportions has occurred among defense workers and the general health among these workers has been good. The State, in cooperation with the Federal government, has provided medical care for dependents of service men when such care is required.

Last fall Governor Darden appointed a State Child Care Committee under the Office of Civilian Defense with representatives from Health, Education, Welfare and other departments of the State and from the Federal government. Dr. Lorin Thompson, of the State Planning Board, was elected chairman of the whole committee, and Miss May O. Hankins, of the State Department of Public Welfare, chairman of the executive committee. This committee was designed to advise and assist the localities in planning for child care in the State. Federal funds have been made available for the salaries of personnel on the staffs of State departments of public welfare and education to coordinate and advise in relation to the development of child care programs in the localities.

The Children's Bureau of the State Department of Public Welfare has had three consultants functioning in the State in an advisory capacity with local child welfare committees and local governmental authorites and citizens.

Local child care committees under O. C. D. have developed with representatives from all major groups in the communities to plan and coordinate the efforts for the extension or development of resources for child care, especially during the war, and if possible, after the war.

Federal funds are available up to 50 per cent for communities undertaking to carry out the program which envisions the development of nursery schools, before and after care of the school age child and for vacation

schools; the care of the day nurseries, the child under two years, foster day care and "home maker and counseling" services, and for the health of any of these groups.

The Child Welfare Committee of the Legislative Advisory Committee is continuing its study of child welfare in Virginia and will no doubt make a later report on its findings.

With inadequate dormitories for most of them, with insufficient teaching facilites, too few teachers and insufficient funds, the State's four industrial schools have met their responsibilities as well as could be expected under the circumstances. Especially do they need a resident physician and a resident dentist at each school, or if feasible in conjunction with some other nearby State institution. These schools, because of lack of financial support have long been neglected in our budgetary setup.

The Commission for the Blind should have two additional ophthalmologists, two additional nurses, and two additional sight-saving class teachers. This request of the Legislature will be made by the Commission for the Blind.

Your Committee recommends that funds be made available under the State Department of Health for determining the partially deaf in our public school system. This can be accomplished by the use of audiometers in all the schools of the State. Several traveling technicians skilled in the use of the audiphone could cover the entire State during each school year. Those found to be partially deaf could be referred to an otologist and the cause of the deafness determined. Treatment of the indigent deaf should be provided by the State. Much repetition of school work could be avoided by suitable seating in the school room. Special classes in vocational training could be provided by the State Department of Education at not too great cost.

The Lynchburg and Petersburg Colonies for epileptics and feebleminded are sadly in need of more dormitories and improved teaching facilities. This need has been repeatedly called to the attention of the Society.

The highest number of births, 65,004, in the State's history was recorded during the past year. The infant death rate was 53.8, the lowest in the State's history.

It is encouraging to report that most of the maternal and child health clinic services previously established have been able to survive during a period in which there has been a marked restriction of transportation facilities together with increased demands on physicians. The attendance at clinics maintained for indigent well babies and pre-school children compares reasonably well with the figures recorded during the previous year. In the defense areas there has been a marked decrease in attendanee of children at clinics. This is due to the ability of the parents to pay private physicians. In areas that have not shown increase prosperity clinic attendance in many instances has increased.

TOTAL CLINIC VISITS—WELL-BABY AND PRESCHOOL SERVICES

	1942-43	PREVIOUS YEAR
Well-Baby	23,478	25,687
Preschool	24,675	24,719

Physicians generally have maintained their interest in work associated with the maintenance of clinic services for infants and children and are to be commended for their efforts during a trying time when there has been an increased demand for their services.

A larger number of preschool examinations than heretofore were conducted by private physicians who responded to efforts of communities to do all possible to prepare children for entrance to school. It may be said, without contradiction, that the quality of examinations in the preschool clinics held by practicing physicians has been at a higher level and evidence has accumulated to show that the results have been worthy of the effort involved.

For some time the Committee on Child Welfare has advocated the development of nutrition services by the Bureau of Maternal and Child Health of the State Department of Health. In a previous year's report the employment of a Nutrition Consultant was noted. During the past year two additional nutritionists were added to the staff of this Bureau to carry out a general education program in nutrition. Nutrition services relating to children have received their share of emphasis. In four selected counties a nutritionist consulted with the parents of each preschool child following an examination by a physician. Advisory assistance has been rendered local departments of education, and consultant service to newly organized nursery schools for children of working mothers in the defense areas has been initiated. Numerous informative talks on nutrition have been made to parent-teacher and other civic groups. This program will be continued and expanded as rapidly as conditions will permit.

There has been a marked interest during the past year by numerous hospitals in the development of facilities for care of premature infants. In many hospitals this service, previously lacking, has been developed with noteworthy results. With the development of new or additional facilities a goodly number of hospitals laid plans for better care of the newborn.

In last year's report of this Committee this statement was made: "There is great need for expansion of hospital facilities for mothers at term." The Committee is pleased to report that the State Department of Health, through its Bureau of Maternal and Child Health, has been able during the past year to develop a plan for the hospitalization of indigent maternity and infant patients with pathological conditions. Indigent infants (up to one year of age) with diseases sufficient to require hospitalization may be hospitalized upon recommendation of the referring physician and the approval of the county health officer. Limited to one county in the beginning, it was found possible to expand the hospitalization plan to include all areas of the State with the exception of cities of the first order. During the nine months in which the plan has been in operation 459 patients have been hospitalized, of which 149 were indigent pediatric cases with a wide variety of complications. Slightly less than one-third of these were prematures for the reason that provision for this care could not be made outside

of hospitals. This program is to be continued as it is felt to be easily worth the money and effort involved.

HANDICAPPED CHILDREN

Dr. Dabney S. Lancaster of the Department of Education is asking an additional appropriation for the care of mentally and physically handicapped children for the next biennium. This additional fund will enable the Department of Education to materially expand its efforts on behalf of these unfortunate youngsters.

TUBERCULOSIS

There are now approximately 120 beds for tuberculous children. It is felt that more beds for children are not needed at this time and no new construction has been projected. There is a feeling among some members of the Committee that more beds could be used to advantage.

During the past year approximately 7,000 students, teachers, drivers of school busses, school janitors and cafeteria workers had x-ray plates of their chests. The Department of Health recommends that all persons coming in contact with school children have x-ray examinations of their chest. This has been planned by the Department but because of lack of personnel has not been carried out.

Dr. E. C. Harper of the Tuberculosis Out-Patient Department of the State Department of Health, in cooperation with Dr. W. L. Harris, Medical Director of the Norfolk School System, x-rayed the pupils of the Ruffner Junior High School and found one case of secondary tuberculosis, healed, one primary tuberculosis, unhealed, fourteen primary cases, healed, two suspicious cases and one with bony abnormality.

This work indicates the possibility of greatly increasing the discovery of contacts if adequate case finding methods could be applied.

It is needless to say that it should be extended to high schools and colleges as soon as funds become available.

There were 91 deaths from tuberculosis in children under 14 years in Virginia last year.

CRIPPLED CHILDREN

There are now in Virginia 190 beds for crippled children. If funds were available 20 or more beds could probably be kept filled. These beds should be provided.

The following table gives a summary of some of the major causes of death among children.

STATE OF VIRGINIA
COMMUNICABLE DISEASES—1942

	REPORTED CASES	No. DEATHS	DEATHS UNDER 15 YRS.	DEATHS PER 100,000 POP.
Diarrhea under 2 yrs.	366*	386	---	13.7
Pneumonia (all forms)	4,583	1,603	622	57.0
Whooping cough	2,405	102	102	3.6
Measles	4,930	16	15	0.6
Scarlet fever	1,637	11	7	0.4
Poliomyelitis	43	6	3	0.2
Diphtheria	699	42	39	1.5
Tuberculosis				
(pulmonary)	3,723	1,456	42	51.8
(all forms)	not available	1,592	91	56.7

*73.9 per cent of the reported cases of diarrhea and dysentery were of unknown age.

CONCLUSIONS

Your Committee wishes to make the following recommendation:

1. That the Legislative Committee of this Society use its best efforts in securing the services of such representatives at the next legislative committee hearings before or during the next session of the Legislature as may be necessary to properly present to such committees the needs of the various departments of the State as outlined above.

Viz:

The Department of Health.
The Department of Child Welfare.
The Department of Education.
The State Hospital Board.
The Commission for the Blind.

C. E. CONRAD
LETA J. WHITE
E. A. HARPER
EMILY GARDNER
R. D. BATES
MAURICE FLIESS
F. D. WILSON, *Chairman.*

Walter Reed Commission

Your Committee wishes to report that Belroi, the birthplace of Walter Reed, is in good condition. There have been a number of visitors to this shrine during the year.

It is recommended that the fire insurance be continued as well as the appropriation of $60.00, or as much thereof as needed, for repairs and up-keep of the house and grounds.

J. D. CLEMENTS
J. W. SMITH
C. P. JONES, *Chairman.*

To Arrange Program for the Health Division of the Virginia Conference of Social Work

On account of the war the General Program Committee of the Virginia Conference of Social Work thought best to limit sectional meetings to one day. The following program for the Health Division was arranged:

MORNING SESSION

"Some Public Health Problems in Concentrated War Areas", Dr. J. C. Neale, Jr., Assistant Director of Rural Health, State Health Department.

"Some Pertinent Effects of the War Effort in Personnel and Health, Particularly as it Relates to Nursing", Miss Mary I. Mastin, Director of the Bureau of Public Health Nursing, State Health Department.

"The Effect of the War Effort on the Tuberculosis

Death Rate", Dr. L. R. Broome, Physician in Chief, Catawba Sanatorium.

"A Brief Description of the Michigan Community Health Project of the W. K. Kellogg Foundation", Dr. J. P. Gray, Dean of Medicine, Medical College of Virginia.

AFTERNOON SESSION

Symposium on Venereal Disease Control

"General Principles Underlying Venereal Disease Control", Dr. W. W. S. Butler, Roanoke.

"The Necessity for Ample Facilities for Confining Prostitutes", Dr. C. B. Ransone, Health Officer, Roanoke.

"Experience in Follow-up Methods for Effective Treatment and Locating Source of Infection", Dr. R. C. Geringer, Venereal Disease Control Officer, Roanoke.

"Problems Arising on Bringing Venereal Disease Cases to Court", Judge J. L. Almond, Jr., Hustings Court, Roanoke.

"Methods in Use for Venereal Control at the American Viscose Corporation and Hercules Powder Company", Dr. J. F. Cadden and Dr. Alexander McCausland.

"State-Wide Problems in Venereal Disease Control", Dr. Baker, State Health Department.

The attendance was extremely limited. For the morning session which was to begin at nine-thirty, it was decided that a quorum would consist of two people other than the speakers. Shortly after ten we succeeded in getting a quorum and proceeded with the program. Attendance was much better in the afternoon, being approximately ten besides the speakers.

PAUL DAVIS, *Chairman*
J. M. MEREDITH
J. E. HAYNSWORTH

As chairman of the committee to arrange a program for the Health Division of the Virginia Conference of Social Work, I was also requested by our President to act as a delegate from this Society. If there were a meeting at any time or place that I was supposed or expected to attend, I failed in my efforts to find it. According to action taken by this body in 1936 it would appear that I was being appointed to serve as a representative on the Virginia Welfare Council. If there is such a council, there was no mention of it in the printed program, and it apparently did not meet in Roanoke during the meeting of the Virginia Conference of Social Work.

After reporting such a "Failure of a Mission", I suppose I should take my umbrella and go back home. Before I do so I should like to ask this body why the Medical Society of Virginia needs or wants representation in the Virginia Conference of Social Work? Attendance at their meetings is limited to members of that society and few if any doctors other than Public Health officials are members. It is true that all doctors, as citizens, should be concerned with and interested in public welfare and do anything practical to further the common good. Is what we are doing practical?

I believe the present arrangement is the wrong approach to the right idea and hope it soon will be abandoned.

PAUL DAVIS.

Pneumonia Commission

When the Pneumonia Commission was set up under the presidency of Dr. Morrison Hutcheson, there was no pneumonia control program in the State of Virginia. In the years that have followed much has been done by the Virginia Board of Health and your commission in popularizing the vast economic loss from pneumonia

TABLE I
PNEUMONIA CONTROL PROGRAM
July, 1942—June, 1943
DRUG REPLACEMENTS

	No. of physicians reporting	No. of cases reported	Bottles of Drugs replacing those used: Sulfadiazine	Sulfathiazole	Sulfapyridine
Physicians in Study Areas	29	139	62	80	
Physicians in Non-Study Areas	82	403	188	235	3
Colony		20		46	
Central State Hospital		2			
Western State Hospital		2			
Kecoughtan		3			
Veteran's Administration Facility		6			
Fort Monroe		68			
Fort Myer		110			
Langley Field		20			
Medical College of Virginia		212			
University of Virginia		0			
	111	985	250	361	3

TABLE II
PNEUMONIA CONTROL PROGRAM
July, 1942—June, 1943
TYPING STATIONS

	No. of Cases	Amount Paid
1. Alexandria	--	-----
2. Arlington	--	-----
3. Charlottesville	11	77.00
4. Clifton Forge	--	-----
5. Lynchburg	6	32.50
6. Machodoc	17	160.00
7. Norfolk (Hospital of St. Vincent de Paul)	--	-----
8. Norfolk (Norfolk General Hospital)	--	-----
9. Richmond (Medical College of Virginia)	1	374.85
10. Roanoke	4	8.00
STATE LABORATORIES		
1. Abingdon	--	-----
2. Luray	--	-----
3. Richmond	--	-----
	39	652.30

deaths in this state and in disseminating knowledge pertinent to the control of pneumonia—first in the use of serum, and later making available to all physicians of the state, without cost, the newest sulphonamide drugs as they have come upon the market. The commission, feeling that its work has now been completed, makes the following report of the year as prepared by our very efficient state epidemiologist, Dr. Harry H. Henderson, concurring in his recommendation that the program be discontinued. It is our further recommendation that the commission be dissolved.

At the close of the fiscal year ending June 30, 1943, the pneumonia control program was again studied to evaluate its success and determine the policies for the coming year. The following findings and recommendations are presented for consideration and action.

Two new approaches to the problem were inaugurated during the year (1) free distribution of sulfadiazine and sulfathiazole for the treatment of pneumonia first to all the physicians in five selected areas and later to all physicians in Virginia. In the study areas all physicians and hospitals were contacted in person and given a supply of the drugs. When a pneumonia case report on a form provided for this purpose was received indicating the drug used, their supply was replaced. In non-study areas the drug used was sent to the physician upon receipt of a case report. (2) Immunization of children between ages of 7 months and 12 years against whooping cough was begun in one county as a special study on the theory that pneumonia is usually a complicating factor in whooping cough deaths.

The purpose in the free distribution of drugs was to make the sulfonamides available to all pneumonia cases and to receive information on the reactions to these drugs so that their value could be determined. Neither purpose now seems to justify the expense. 1,036 bottles of sulfadiazine, 860 bottles of sulfathiazole and 41 bottles of sulfapyridine were distributed during the year, a large

TABLE III

PNEUMONIA CONTROL PROGRAM

BUDGET AND EXPENSES

Appropriation For	1940-1941		1941-1942		1942-1943		1943-1944	
	Budget	Expenditures	Budget	Expenditures	Budget	Expenditures	Budget	Expenditures
Salary	$ 1,000.00	$ 1,000.00	$ 1,200.00	$ 550.00	$ 1,200.00	$ -------	$ 1,260.00	
Special Travel	400.00	257.40	500.00		500.00		500.00	
Medical and Laboratory Equipment	1,000.00	59.40						
Medical and Laboratory Supplies	500.00	423.91						
Medical and Laboratory Supplies	8,000.00	6,262.91	6,737.09	2,154.99	6,700.00	4,613.85	6,700.00	
Contractual Services			500.00	1,137.40	225.00	124.95	225.00	
Payments to Laboratories	5,000.00	1,151.00			1,800.00	652.35	1,800.00	
Communication	600.00							
Office Supplies	300.00	102.36			150.00	19.97	150.00	
Equipment			300.00		700.00		325.00	
Other Supplies			500.00	10.99				
(Contract—Medical College) Other Expenses		416.50						
Transportation		11.78						
TOTAL	$16,800.00	$ 9,685.26	$ 9,737.09	$ 3,853.38	$11,275.00	$ 5,411.12	$10,960.00	
Federal Funds Included	$ 8,000.00		$ 1,737.09					

part of which was for stocking the hospitals and physicians in the study areas. Table I shows the pneumonia case reports received and the drugs sent out to replace what had been used. For actual replacement only 250 bottles of sulfadiazine, 361 bottles of sulfathiazole, and 3 bottles of sulfapyridine were used. Two hundred and forty-nine (249) physicians and 10 hospitals in the study areas were contacted in person. Of these only 29 physicians reported a total of 139 cases. From the entire state 111 physicians reported 542 cases. State Institutions reported 33 cases, Army Camps 198, and the Medical College of Virginia 212. Of these none except the Colony, the Medical College and the University of Virginia received any drugs. In all, 1,937 bottles of the sulfa drugs were distributed and 985 case reports received which makes an average of almost 2 bottles per case. However, many of these cases were from sources not being supplied with drugs. Excluding the Medical College of Virginia and the University of Virginia, State Institutions and Army Camps, 1,613 bottles of drugs were distributed and 542 case reports received which makes the average 3 bottles per case. It now seems quite evident that physicians will not take the trouble to report cases to obtain the drugs which they can buy in large quantities cheaply.

From the study standpoint the case reports are practically valueless. With a few notable exceptions the drug reactions were none or not mentioned. So many cases were ill such a short time that the diagnosis of pneumonia is questionable. Even the amount of drug given is not reliable.

The whooping cough immunization program has just been started in Albemarle County. To date 160 cases have been immunized, but it is too early to evaluate its success.

In order to make the serum treatment for pneumonia available for the relatively few cases which require it, 13 typing stations including the State and 2 District Laboratories, and the Medical College of Virginia as shown in Table II were maintained as typing stations. The Medical College of Virginia has an annual contract with the State and the three State Laboratories do the typing anyway. Of the 10 paid laboratories, only 5 reported any work. The Clinic Laboratory of the University Hospital did laboratory work on 11 patients, the Machodoc Laboratory on 17, Lynchburg City Health Department on 6, the Roanoke City Health Department on 4 and the Medical College of Virginia 1. The cost of the work on these 39 patients was $652.35 plus $190.00 for supplying typing sets to 10 typing stations or an average cost of $21.60 per patient. The total expenditure for the year was $5,411.12 of which $3,251.25 was for sulfadiazine and sulfathiazole. The budget appropriation for the program was $11,275.00. The difference reverted to the State fund. For the budget and expenditure of the pneumonia program see Table III.

RECOMMENDATIONS

Since the pneumonia program no longer serves any useful purpose, it is recommended that it be abolished.

GEORGE B. LAWSON
HARRY WALKER
B. S. YANCY
JULIAN BECKWITH
S. K. AMES
P. S. SMITH
H. B. MULHOLLAND
ERNEST G. SCOTT
MANFRED CALL, III
A. B. HODGES
WYNDHAM B. BLANTON, *Chairman.*

To Confer With State Board of Nurses' Examiners

Your Committee to Confer with the State Board of Nurses' Examinners has had no formal meeting with the nurses during the past year. The chairman had several conferences with the Secretary, Miss McLeod, and others. These were for the purpose of keeping the Committee informed of what is going on in the Nursing World. This had to do with the Army's plan of subsidizing nurses in training for future army service.

W. LOWNDES PEPLE, *Chairman.*

Syphilis Control

The Syphilis Control Committee has offered its services to advise, cooperate with and work with the State Bar Association in any program aimed to reduce venereal diseases in Virginia.

Current Information on Syphilis in the VIRGINIA MEDICAL MONTHLY is being continued under the editorship of Dr. D. C. Smith, Charlottesville. Please address questions or comments to him.

RAYMOND KIMBROUGH, *Chairman.*

Tuberculosis

The Committee met in Richmond, May 30, 1943, with all of the members present.

The entire Tuberculosis Program in Virginia was reviewed and the results for the past year analyzed. In spite of the many handicaps experienced it seems the year was as a whole a very successful one. The tuberculosis death rate in the State showed a slight decline, something unusual in war time. The routine x-ray examination of the chests of the young men for military duty at the Army Induction Centers has discovered quite a number of early cases of tuberculosis, and in most instances, where it was needed, provisions have been made for their treatment. The Christmas Seal Sales last year were the largest in the history of the State, there being an increase of 26.2 per cent over previous years. The various Tuberculosis Organizations which in time of peace were kept functioning perfectly, have under war time conditions found it more difficult to operate, due to shortage of personnel, transportation difficulties, etc. However, all the workers remaining in this field have given unsparingly of their time and talents, and have achieved good results.

DEATH RATE

During the calendar year 1942, there were 1,592 deaths from all forms of tuberculosis, both white and

colored, in the State. (Figures obtained from Bureau of Vital Statistics June 4, 1943.) For the two races this was 743 for whites and 849 for colored—the rate for the two combined was 56.7 per 100,000 population (whites 34.9, colored 125.1). This is a reduction of 46, or 2.9 per cent in total deaths as compared to 1941. The distressing part of this good news is we cannot hope for a continued reduction in this rate. The full devastating effects of the disease on our population in war time is usually not felt for perhaps three or four years, or even longer from the onset.

Virginia Tuberculosis Association

During 1942 the Virginia Tuberculosis Association, through a large corps of workers, has carried its excellent educational work on tuberculosis to every nook and corner of the State. In April when the "Early Diagnostic Campaign" was on this organization went into seventy counties and eight cities reaching thousands of our people with talks, attractive pamphlets, posters and moving pictures. Volunteer workers have assisted in finding the early cases of tuberculosis, and have made possible sanatorium care and treatment to those recommended for it. Also through them a program of information and instruction has been conducted for pupils in schools. It is impossible to estimate the good which may be accomplished by an organization of this kind in the statewide program to eradicate tuberculosis.

Teaching Tuberculosis to Medical Students

The standardization of the course given on Tuberculosis at the two State Medical Schools was again taken up and discussed freely. Dr. Harrell was asked to contact several of the medical schools in the east and get an outline of the course being given by them to assist the Committee in outlining a course to be recommended here.

Beds for Treatment

The total number of beds in the State for the treatment of tuberculosis has remained about the same, though the closing of Tidewater Memorial Hospital did slightly reduce the number. The war has retarded the building program for increasing the bed capacity, and this phase of the work will be at a standstill for the duration. Available Sanatorium beds:

	White	Colored	Total
State	770	269	1,039
Municipal	393	192	585
Total	1,163	461	1,624

Selective Service

Since the Induction work was started, the total rejections from all causes at the Army Induction Centers in the State through February, 1943, was 4,026; to June 1, 1943, 2,269 were rejected because of tuberculosis. These figures have not been broken down so we do not know just how many cases of clinical tuberculosis are included in the group and need treatment. The majority, however, are cases of healed primary tuberculosis that need no special treatment except periodic x-rays of the chest, but were rejected because of the character and extent of the calcium deposits in the lungs.

Industrial Surveys

The Tuberculosis Out-Patient Service of the State Department of Health has continued its good work of conducting chest x-ray clinics at the industrial plants throughout the State. This work was started in June, 1941, and for the two-year period ending June, 1943, 80,773 people were x-rayed. For a one-year period May, 1942, to May, 1943, 33,376 were x-rayed. The findings in this latter period of one year were as follows:

Secondary, or reinfection tuberculosis (active)	127
Secondary, or reinfection tuberculosis (healed)	43
Primary tuberculosis (active)	14
Primary tuberculosis (healed)	699
Suspicious	131

This is unquestionably the finest piece of mass tuberculosis survey work that has ever been conducted in this State, and the Committee hopes it can be continued and broaden its scope so that it will finally reach every industrial employee in this Commonwealth.

Collapse Therapy in the Field

This service has continued but on a smaller scale than formerly. Some of the physicians operating the Pneumothorax Stations have entered military service, and they have not been replaced by men qualified to administer these treatments. It is important for this work to be carried on, and it is hoped that physicians on the home front will get the necessary equipment for administering the refills.

Due to the loss of the clinicians, and the inability to replace them, the chest clinics conducted throughout the State for many years have had to be curtailed. Valuable work like this should, and we hope can, be continued through the war period, even though it is not on a scale which the State Department of Health desires.

The War and Tuberculosis

There has been much comment in recent months on the effect the World War will have on tuberculosis morbidity and mortality. It is a well known fact that in all previous wars infectious diseases, particularly tuberculosis, have often had a devastating effect on the civilian population as well as the armed forces. The present global conflict should prove no exception.

It has been conservatively estimated (Hendricks) that there are now on the continent of Europe at least 10,000,000 cases of tuberculosis.

The world conflict of 1914-18 for the first time in this country revealed tuberculosis as a major war problem. This was even more pronounced in Europe. The mortality in Warsaw increased from 320 per 100,000 before the war to 975 per 100,000 in 1917. Germany's death rate rose from 157 per 100,000 in 1913 to 287 in 1918. It has been conservatively estimated for all of Europe that the death rate was increased during that war period from 15 to 20 per cent. The explanation of the increase in tuberculosis in Europe during the

first World War has been the subject of extended research. Crowded conditions, malnutrition, exposure, faulty living conditions and misery are a few of the causes listed. Unfortunately most of these conditions still exist in the present conflict, and will operate to increase the incidence of the disease not only in Europe, but in the United States as well. We may add to these, accelerated industry with longer hours, nation-wide food rationing which must interfere with nutrition, emotional strain, anxiety and worry. In our own State, particularly the Hampton Roads area, we are told of the crowded living conditions brought about by a rapidly increased population to meet the labor industrial demands. Mass living in crowded areas like this, and less attention to personal hygiene will surely be conducive to the spread of tuberculosis or any other communicable disease. So, with these facts before us, the Committee is of the opinion that the death rate from this disease is almost sure to rise in this State as it has in all other similar conflicts, and that all available facilities should be put into operation now to minimize this serious danger.

C. LYDON HARRELL
EDGAR C. HARPER
FRANK B. STAFFORD, *Chairman.*

Advisory to State Department of Health

The Advisory Committee to the State Department of Health has had nothing referred to it. In fact, since its creation this Committee has had no word from the State Department of Health of any service that we can render. In the opinion of the Chairman, therefore, this Committee might just as well be discontinued.

F. H. SMITH, *Chairman.*

Cancer

The Cancer Committee of the Medical Society of Virginia has had no meeting since the last meeting of the House of Delegates, on account of war conditions. However, the Dixie Hospital of Hampton, Virginia, was by mail voted certified as having fulfilled the requirements set up by this Committee to act as a tumor clinic at which funds publicly subscribed can be spent for the care of indigent patients.

The Clinic will be under the directorship of Dr. Albert A. Creecy and will be known as the Dixie Hospital Tumor Clinic.

This action of the Committee has already been reported in the April issue of the VIRGINIA MEDICAL MONTHLY.

EDWIN P. LEHMAN, *Chairman.*

Industrial Health

Your Committee has had no meeting during the year, but some business has been transacted by letter. We, with several other interested organizations, sponsored an Institute on Industrial Health in Richmond on September 24, 1942. The principal speaker at this meeting was Dr. J. G. Townsend, Director of the Division of Industrial Health, U. S. Public Health Service, Bethesda, Maryland. Members of the Society and a nurse and nutritionist also spoke. This meeting was a dinner and night meeting and was well attended.

We, in co-operation with the Department of Clinical and Medical Education, sponsored and helped to arrange Institutes on Industrial and War Medicine in Newport News, Norfolk, Portsmouth, Suffolk, and Petersburg. The United States Public Health Service, the United States Navy Medical Board, the American Medical Association, the Bureau of Industrial Hygiene of the State Health Department, and the Industrial Commission of Virginia co-operated with the Department and the Committee in putting on these programs. Details as to programs and places of these institutes are given in the report of the Department of Clinical and Medical Education.

The Department of Clinical and Medical Education and the Committee also aided in a program of the Clinch Valley Medical Society held on April 30, 1943.

On June 9, 1943, the Committee again was one of the sponsors of a panel discussion on "Absenteeism in Industry Due to Sickness", held in Richmond. This was a very well attended meeting, reaching some of the important industrial leaders, also physicians and nurses prominent in industrial medical work.

H. W. DECKER
J. V. JORDAN
G. McL. LAWSON
A. M. MCCAUSLAND
I. C. RIGGIN
H. U. STEPHENSON
W. R. WHITMAN
F. J. WAMPLER, *Chairman.*

Coordination of Medicine, Dentistry, Pharmacy and Nursing

Your Committee on Coordination of Medicine, Dentistry, Pharmacy, and Nursing met on August 17 at the John Marshall Hotel in Richmond with a full membership in attendance.

After considerable discussion this Committee begs leave to submit the following:

1. That the Virginia State Dental Association and the Virginia Pharmaceutical Association be invited to send two delegates each to the next annual meeting of the Medical Society of Virginia. Should these two societies see fit to reciprocate this invitation, it is strongly recommended that the Medical Society of Virginia then appoint delegates to the meetings of these two allied professional groups. Furthermore, it is recommended that these delegates submit proper reports to the Society of their participation along with recommendations bearing toward a closer relationship between the three professions of dentistry, pharmacy, and medicine.

It is envisaged that this interchange of delegates will serve as a sound foundation upon which can be had, as occasion demands, collaborations dealing with problems of mutual importance.

2. Since there is already an existing committee concerned with certain aspects of nursing-physician relationship (Committee to Confer with the State Board of

Nursing Examiners) no recommendations pertaining to nursing was felt to be in order at the present time.

GUY R. HARRISON
DOUGLAS G. CHAPMAN
H. B. HAAG, *Chairman.*

Health Museum

There has been no formal meeting of this committee as nothing was referred for consideration. In view of the fact that the exhibits, which Dr. R. J. Main placed in the Valentine Museum, were withdrawn and that the Richmond Academy of Medicine suggested that no action be taken about a museum for the duration of the war we suggest that this committee be dismissed until such a time when the program can be revised.

FRANK POLE
WILLIAM MEYER
EMMETT C. MATTHEWS, *Chairman.*

To Study Clinical Laboratories

The Committee does not have any report and believes that no detailed study of clinical laboratories should be made during the present time.

W. E. BRAY, *Chairman.*

To Study Intern Distribution

In spite of earnest efforts there have been no very important material results to date from the work of the Committee. At the same time the needs of the Hampton Roads area have been laid before the officials who would seem to be the most likely sources of help. The committee has dealt with Dr. Hugh Trout, Chairman Procurement and Assignment Service for Virginia, and with the authorities of the medical schools of the University of Virginia and of the Medical College of Virginia.

The Chairman of the Procurement Service advised that the problem had been thoroughly canvassed with the Directing Board in Washington, and it seemed to Dr. Trout more hopeful to look to the United States Public Health Service than to the Army, Navy or Marines. At that time, June, the Public Health Service had assigned two of their men to assist in the Dispensary work associated with the hospitals in Norfolk. A survey was under way in the Hampton Roads area, made at the request of the State Commissioner, Dr. I. C. Riggin, and the Chairman of the Procurement and Assignment Service of Virginia. This was with a view to determining the need for sending more Public Health Service men for similar duties.

Because of the acceleration of the courses in the medical schools and the resulting three months overlapping of new and old internes, the Medical College of Virginia was enabled to spare a few internes for a service of about three months elsewhere, and approximately six went to Norfolk.

On June 26 the committee met with the Dean and the Hospital Superintendent of the Medical College of Virginia, and the Superintendent of the University Hospital. The situation in Norfolk was described by Dr. Harrell of our committee and by a committee from the Norfolk General Hospital. A thorough spirit of co-operation was apparent. The officers of the medical schools expressed the hope but could not promise that some internes could be released after January 1 for work in the defense areas, and the Norfolk representatives expressed the hope that the services in that area could be somewhat reorganized with a view to making the services as attractive as possible.

In the opinion of the committee the essence of the situation is in the fact that no one but the military authorities can order the movements of internes from place to place, and anything that is accomplished depends largely upon the ability of a hospital to make its services attractive to prospective internes.

C. L. HARRELL
ROBERT V. FUNSTEN
JAS. H. SMITH, *Chairman.*

Delegate to Meeting of Medical Society of State of North Carolina

The ninetieth session of the Medical Society of the State of North Carolina was held in Raleigh on May 10, 11 and 12, 1943.

In attending the meetings of the House of Delegates I was impressed with the unity in the organization of the Society. The delegates from the component societies and the councillors displayed a keen interest in the state organization, and were enthusiastic in reporting conditions in their respective localities. The President and Secretary having visited practically every section of the state in attending district meetings had first-hand knowledge of the accomplishments and problems of the component societies as well as the state organization. The spirit of cooperation and the willingness and need to work with increasing effort toward the continuation of a strongly unified state medical society was manifest. In spite of war conditions the attendance was good and the program excellent.

O. B. DARDEN, *Delegate.*

Delegates to Roanoke Meeting.

The following have been reported as delegates and alternates from the component societies to the annual meeting of the State Society at Roanoke. If you have not reported, will you please send names at once to headquarters, 1200 East Clay Street, Richmond 19.

Delegate	*Alternate*
Accomack	
Dr. C. E. Critcher	Dr. G. R. Fletcher
Albemarle	
Dr. D. C. Wilson	Dr. J. F. McGavock
Dr. E. P. Lehman	Dr. McLemore Birdsong
Dr. Percy Harris	Dr. M. K. Humphries, Jr.
Alexandria City	
Dr. C. L. Fifer	Dr. R. B. Hightower

Delegate	*Alternate*
Alleghany-Bath	
Dr. R. L. Claterbaugh	Dr. S. G. Miller
Dr. S. P. Hileman	Dr. G. A. Torrence
Augusta	
Dr. Guy R. Fisher	
Dr. H. G. Middlekauff	
Bedford	
Dr. T. P. West	Dr. M. P. Rucker
	Dr. J. G. Jantz
Botetourt	
Dr. H. L. Baptist	Dr. E. W. Dodd
Charlotte	
Dr. Wm. R. Martin	Dr. Thomas Watkins
Culpeper	
Dr. Granville Eastham	Dr. O. K. Burnette
Danville-Pittsylvania	
Dr. P. W. Miles	Dr. R. W. Garnett
Dr. C. D. Bennett	
Dickenson-Buchanan	
Dr. P. Q. Daniel	Dr. J. C. Moore
Dr. T. C. Sutherland	Dr. R. L. Hillman
Fairfax	
Dr. R. L. Feagans	Dr. E. C. Shull
Fauquier	
Dr. J. E. Knight	Dr. M. B. Hiden
Fourth District and Southside	
Dr. J. M. Habel	Dr. H. C. Rucker
Dr. Frank Lukin	Dr. D. A. Christian
Dr. W. C. Harman	Dr. T. H. Anderson
Dr. Wright Clarkson	Dr. Meade Edmunds
Dr. C. E. Martin	Dr. L. P. Jones
Dr. W. D. Kendig	Dr. H. E. Whaley
Dr. W. W. Wilkinson	Dr. L. H. Bracey
Dr. J. M. Hurt	Dr. J. A. B. Lowry
Dr. T. G. Hardy	Dr. T. E. Knight
Dr. A. T. Brickhouse	Dr. O. L. Jones
Dr. B. H. Knight	Dr. F. E. Steere
Dr. T. S. Jennings	Dr. R. B. McEwen
Halifax	
Dr. L. P. Bailey	Dr. W. L. Eastlack
Hanover	
Dr. John D. Hamner, Jr.	
Isle of Wight	
Dr. Rea Parker	Dr. Hugh Warren
James River	
Dr. T. L. Driscoll	Dr. E. B. Nuckols
Dr. Garland Dyches	Dr. O. L. Huffman
Dr. J. H. Yeatman	Dr. L. W. Hulley
Loudoun	
Dr. J. A. Gibson	Dr. W. O. Bailey
Louisa	
Dr. H. S. Daniel	Dr. E. B. Pendleton
Lynchburg Academy	
Dr. S. E. Oglesby	Dr. F. O. Plunkett
Dr. E. A. Harper	Dr. B. H. Kyle

Delegate	*Alternate*
Mid-Tidewater	
Dr. R. D. Bates	
Dr. A. W. Lewis	
Dr. H. A. Tabb	
Dr. J. R. Parker	
Dr. J. M. Gouldin	
Dr. J. R. Gill	
Dr. W. P. Jones	
Nansemond	
Dr. J. M. Habel, Jr.	Dr. O. R. Yates
Nelson	
Dr. B. F. Randolph	Dr. Estes Kidd
Norfolk	
Dr. N. F. Rodman	Dr. C. W. Schenck
Dr. P. St. L. Moncure	Dr. B. L. Parrish
Dr. F. C. Rinker	Dr. B. A. Doggett
Dr. M. S. Fitchett	Dr. J. W. White
Dr. A. A. Burke	Dr. M. B. Savage
Dr. C. L. Harrell	Dr. N. G. Wilson
Northampton	
Dr. J. W. Jackson	Dr. W. Carey Henderson
Northern Neck	
Dr. E. T. Ames	Dr. Chas. Griffith
Dr. J. H. Hare	Dr. H. L. Segar
Dr. R. E. Booker	Dr. L. E. Cockrell
Dr. M. C. Oldham	Dr. Lee S. Liggan
Northern Virginia	
Dr. F. T. Amiss	Dr. George Long
Dr. J. P. Snead	Dr. J. G. Brown
Dr. C. O. Dearmont	Dr. C. H. Iden
Dr. H. W. Miller	Dr. George Parrott
Dr. F. D. Whitworth	Dr. Elizabeth Sherman
Dr. P. W. Boyd	Dr. H. I. Pifer
Patrick-Henry	
Dr. W. N. Thompson	Dr. J. T. Shelburne
Dr. D. H. Mason	Dr. E. M. McDaniel
Piedmont	
Dr. E. D. Davis	Dr. Garland Dyches
Princess Anne	
Dr. Ira Hancock	Dr. R. E. Whitehead
Richmond Academy	
Dr. E. L. Flanagan	Dr. J. L. Tabb
Dr. J. T. Tucker	Dr. C. H. Beach
Dr. Joseph Bear	Dr. J. M. Whitfield, Jr.
Dr. I. A. Bigger	Dr. W. B. Porter
Dr. W. D. Suggs	Dr. W. W. Gill
Dr. W. H. Higgins	Dr. C. E. Llewellyn
Dr. W. L. Peple	Dr. C. L. Outland
Dr. M. Pierce Rucker	Dr. T. S. Shelton
Dr. O. B. Darden	Dr. A. E. Turman
Dr. R. F. Simms	Dr. E. T. Trice
Roanoke Academy	
Dr. F. A. Farmer	Dr. L. D. Keyser
Dr. W. W. S. Butler, Jr.	Dr. Paul Davis
Dr. W. L. Powell	Dr. K. D. Graves
Dr. J. T. Hughes	Dr. G. S. Hurt

Delegate	*Alternate*
Rockbridge	
Dr. M. T. Vaden	
Rockingham	
Dr. N. M. Canter	Dr. B. S. Yancey
Russell	
Dr. W. C. Elliott	Dr. R. F. Gillespie
Southampton	
Dr. J. A. Grizzard	Dr. R. L. Raiford
Southwestern	
Dr. C. F. Graham	Dr. E. M. Chitwood
Dr. W. C. Caudill	Dr. S. A. Tuck
Dr. A. B. Graybeal	Dr. D. C. Boatwright
Dr. J. J. Davidson	
Dr. A. M. Showalter	Dr. J. J. Giesen
Dr. R. D. Campbell	Dr. H. M. Hayter
Dr. V. J. Cox	Dr. W. P. Davis
Dr. W. F. Delp	Dr. D. S. Divers
Dr. W. A. Porter	Dr. J. G. Cox
Tazewell	
Dr. Mary E. Johnston	Dr. J. N. Higginbotham
Warwick	
Dr. W. R. Payne	
Dr. E. B. Mewborne	
Williamsburg-James City	
Dr. H. E. Davis	Dr. A. M. Sneed
Wise	
Dr. G. B. Setzler	Dr. F. E. Handy
Dr. J. H. Hagy	Dr. F. S. Givens

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

This twenty-two year old colored multipara was admitted to a hospital at 1:10 P. M. on November 21st. She had seen a physician a few times at irregular intervals during her pregnancy, but had had no regular prenatal care. She was seen by a second physician, in the absence of the first one, at 4:00 A. M. November 21st. She had been "spotting" intermittently for three weeks. She called the second physician because of free bleeding and the passing of clots. The patient was pale. Her pulse was 84, and her respiration was normal. There was still some vaginal bleeding. The foot of the bed was elevated, cold towels were applied to the abdomen and the patient was given nembutal. No vaginal examination was made. The patient was seen again at 10:00 A. M. Her pulse was 100. The bleeding was less, but her general condition was worse. She was advised to go to the hospital at once.

When she arrived at the hospital at 1:10 P. M. the patient was "bled out and pulseless". Temperature was 96. Pulse 120 and respiration 22. Red blood cells numbered 2,910,000, hemoglobin was 59 per cent and white cells 11,400. She was taken to the delivery room and given ¼ grain of morphine and a venoclysis of 1,000 cc. of glucose in normal salt solution. At 4:00 P. M. she was delivered of a stillborn premature infant by version and extraction under ether anesthesia. Following the delivery there was no further bleeding. The patient's condition improved temporarily and then grew rapidly worse. She died at 6:20 P. M. No attempt was made to secure donors for transfusion, "because she did not bleed any more following delivery". There was no record of a physical examination or a pelvic examination on the hospital chart, nor was there any record of the patient's blood pressure.

COMMENT

This case is considered as a preventable obstetrical death for several reasons. In the first place there was no regular prenatal care. Had the patient had good prenatal care, the danger sign of bleeding would have been recognized, and an attempt would have been made to find the source of this bleeding. This had best be done in a hospital. Soft tissue x-ray study, especially if the bladder and rectum be filled with air, will usually demonstrate the location of the placenta very definitely when there is a history of bleeding in the last trimester of pregnancy. A vaginal or even a rectal examination should not be done until the examiner is ready to cope with a hemorrhage should the examination start the bleeding afresh. The second physician is to be commended for *not* making a vaginal examination.

In the second place this case is considered a preventable obstetrical death because of the treatment she did not get in the hospital. She was admitted in shock, "pulseless and bled out". No effort was made to find available blood which was the patient's

first need. She was not even given plasma which should have been available. Instead, she was given 1,000 cc. of glucose and saline solution, a transitory boost at best. It is even conceivable that this treatment did actual harm in that it may have started up fresh bleeding and in this way encouraged the third *faux pas*.

In the third place this case is considered a preventable obstetrical death because a shocked patient was given a general anesthetic and delivered by version and extraction. The patient was said to have been seven or eight months pregnant. Consideration for the fate of the baby should have carried little weight in choosing the proper mode of delivery. Even so, a version and extraction of a premature infant, even if a mother be in good condition, carries a high fetal mortality. Had a Braxton Hicks or Marmaduke Wright version been done and a foot brought down, the bleeding could have been controlled, and the mother could have been allowed to deliver spontaneously. Furthermore, no general anesthetic would have been necessary. A simpler procedure still would have been scalp traction. Willet's forceps or a stout clamp could have been fastened to the baby's scalp and enough weight could have been fastened to it to keep the head against the cervix. In this way the bleeding would have been controlled and the birth hastened.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for August, 1943, compared with the same month in 1942, and for the period of January through August, 1943, compared with the same period in 1942, follows:

	Aug. 1943	Aug. 1942	Jan.-Aug. 1943	Jan.-Aug. 1942
Typhoid and Paratyphoid Fever	32	52	135	152
Diarrhea and Dysentery	1270	1310	3895	3389
Measles	134	38	9319	4786
Scarlet Fever	50	42	1139	779
Diphtheria	22	35	203	271
Poliomyelitis	10	8	31	19
Meningitis	29	6	721	120
Undulant Fever	3	5	26	22
Rocky Mountain Spotted Fever	14	13	42	38
Tularemia	4	5	32	31

REALIGNMENT OF COUNTY HEALTH DEPARTMENTS

Because of conditions for which the war has been responsible, it has been necessary from time to time for the State Department of Health to rearrange jurisdictional boundaries so that the greatest number of persons could be served by the remaining county health department personnel.

In line with this policy, since July 1, 1942, the following consolidations have occurred: Augusta and Rockingham County Health Departments, Halifax and Pittsylvania County Health Departments, and Smyth and Washington County Health Departments. Moreover, the Southampton County Health Department was added to the Isle of Wight and Nansemond Health District.

Further, to utilize available health officers and other personnel, Buchanan County, formerly a single health department unit, was joined to Tazewell; and Wise, also formerly a single unit, was joined to Russell. Previously, Tazewell and Russell had been operated as a District. This shift has made possible the services of two health officers where heretofore there had been three.

Three Districts, namely, Prince William-Stafford, Smyth-Washington, and Norfolk-Princess Anne, now are being directed by health officers loaned to the Department by the U. S. Public Health Service.

In addition, three Districts, composed of six counties, namely, Fairfax, Alleghany-Botetourt, and Page-Warren-Shenandoah, at present lack health officers, though nursing and sanitation services are provided. Public health administration of these districts is under the direct supervision of the State Health Department's Bureau of Rural Health.

Despite these readjustments, public health activities which are greatly restricted due to lack of personnel, have been continued.

The complete list of Health Districts, which incidentally includes 51 counties, with the names of the health officers and addresses, follows:

County	Health Officer	Address
Albemarle-Charlottesville	Dr. Thomas S. Englar	Charlottesville
Alleghany-Botetourt		Covington
Arlington	Dr. R. G. Beachley	Arlington
	Dr. Verlin Miles, Asst.	
Augusta-Rockingham-Harrisonburg	Dr. Thomas Scarlett	Harrisonburg
	Dr. H. M. Wallace, Asst.	Staunton
Brunswick-Greensville-Mecklenburg	Dr. T. H. Valentine	Lawrenceville
Buchanan-Tazewell	Dr. Paul J. Bundy	Richlands
Charlotte	Dr. William R. Martin	Charlotte C.H.
Chesterfield	Dr. Earle C. Gates	Chesterfield
Fairfax		Fairfax
Giles-Montgomery-Radford	Dr. A. Glenn Evans	Christiansburg
Halifax-Pittsylvania	Dr. D. C. Steelsmith	South Boston
Hanover	Dr. J. D. Hamner, Jr.	Ashland
Henrico	Dr. J. H. Crouch	Richmond, RFD 14, Box 294
Isle of Wight-Nansemond-Southampton-Suffolk	Dr. H. D. Crow	Suffolk
Loudoun	Dr. C. E. Waller	Leesburg
Norfolk-Princess Anne	Dr. E. W. Langs	701 London St., Portsmouth
Northampton	Dr. J. Walker Jackson, Acting	Eastville
Orange	Dr. Lewis Holladay, Acting	Orange
Page-Warren-Shenandoah		Luray
Peninsula (Elizabeth City, James City, Warwick, York)	Dr. W. W. Fuller	Williamsburg
	Dr. D. K. Freedman, Asst.	Hampton
Prince William-Stafford	Dr. James A. Dolce	Manassas
Pulaski-Wythe	Dr. Thomas F. McGough	Pulaski
Rockbridge	Dr. R. P. Cooke	Lexington
Russell-Wise	Dr. Linwood Farley	Norton
Smyth-Washington-Bristol	Dr. Catherine W. R. Smith	Abingdon
Southside (Buckingham, Cumberland, Nottoway, Prince Edward)	Dr. J. N. Dudley	Farmville
Sussex-Prince George-Dinwiddie	Dr. Francis J. Clements	Stony Creek

Woman's Auxiliary
to the
Medical Society of Virginia

President — MRS. H. W. ROGERS, Norfolk
President-Elect — MRS. CLYDE WEST, Alexandria
Vice-Presidents:
MRS. LOUIS KOLIPINSKI, Richmond
MRS. J. L. DECORMIS, Accomac
MRS. HENRY TOWNSEND, Marshall
MRS. WRIGHT CLARKSON, Petersburg
Recording Secretary — MRS. C. C. SMITH, Norfolk
Corresponding Secretary — MRS. A. G. HORTON, Norfolk
Treasurer — MRS. REUBEN SIMMS, Richmond
Parliamentarian — MRS. FLETCHER J. WRIGHT, Petersburg

PROGRAM
Twenty-First Annual Meeting
Roanoke **October 25, 26, 27, 1943**
Headquarters: Hotel Roanoke

Registration begins Monday at 7:00 P. M., and every woman attending the Convention is requested to register promptly upon arrival, either as a visitor or delegate. (Registration fee—25 cents).
Chairman of Registration—
Convention Chairman—MRS. CHAS. W. DORSEY

Monday, October 25th

8:00 P. M.—Pre-convention Board meeting, Hotel Roanoke.

State Officers, Chairmen of Standing Committees, and Presidents of Local Auxiliaries are expected to attend this meeting. Past Presidents, Directors and Presidents-Elect of Local Auxiliaries are invited to attend.

Tuesday, October 26th

9:30 A. M.—General Annual Meeting, Hotel Roanoke.

Open to all women attending the Convention.
MRS. H. W. ROGERS, President, presiding
Invocation—MRS. HENRY A. LATANE
Address of Welcome—Member of Roanoke Committee
Response—MRS. W. E. BUTLER
Roll Call—MRS. C. C. SMITH

In Memoriam—MRS. J. L. DECORMIS
Minutes Twentieth Annual Convention
Minutes Post-Convention Board Meeting
Minutes Mid-Winter Board Meeting
Minutes Pre-Convention Board Meeting
President's Message—MRS. H. W. ROGERS
Reports—
Vice-Presidents—
Mrs. Louis Kolipinski.
Mrs. J. L. DeCormis.
Mrs. Henry Townsend.
Mrs. Wright Clarkson.
Corresponding Secretary—Mrs. A. G. Horton.
Treasurer—Mrs. Reuben Simms.
Parliamentarian—Mrs. Fletcher J. Wright.
Committee Chairmen—
Bulletin—Mrs. Franklin D. Wilson.
Cancer Control—Mrs. Hawes Campbell.
Finance—Mrs. Paul Pearson.
Historian, Archives and Research—Mrs. Henry A. Latane.
Hygeia—Mrs. E. T. Terrell.
Jane Todd Crawford Memorial—Mrs. J. M. Emmett.
Legislation—Mrs. P. M. Chichester.
Leigh-Hodges-Wright Memorial Bed — Mrs. Fletcher J. Wright.
Membership—Mrs. Louis Kolipinski.
Organization—Mrs. E. Latane Flanagan.
Press and Publicity—Mrs. C. E. Arnette.
Program and Health—Mrs. C. E. Holderby.
Public Relations—Mrs. R. M. Reynolds.
Revisions—Mrs. William Lett Harris.
Reports of Local Auxiliary Presidents—
Auxiliary to Accomac-Northampton Medical Society—Mrs. O. R. Fletcher.
Auxiliary to Alexandria Medical Society—Mrs. Nathan G. Schumann.
Auxiliary to Mid-Tidewater Medical Society—Mrs. Hawes Campbell.
Auxiliary to Norfolk County Medical Society—Mrs. W. E. Butler.
Auxiliary to Petersburg Unit of Fourth District Medical Society—Mrs. Henry Snead.
Auxiliary to Richmond Academy of Medicine—Mrs. Percy E. Schools.
Auxiliary to Warwick County Medical Society—Mrs. Paul Hogg.
Auxiliary to Williamsburg-James City County Medical Society—Mrs. E. T. Terrell.
Delegate to Woman's Auxiliary to Southern Medical Association—Mrs E. Latane Flanagan.
Presentation of Membership Trophy—MRS. FRANKLIN D. WILSON
Acceptance of Trophy—
Business:
Recommendations from the Board
Report of Committee on Credentials and Registration
Report of Nominating Committee—MR. HAWES CAMPBELL, Chairman
Election of Officers
Introduction of Guest Speaker—DR. W. E. BUTLER
Guest Speaker—DR. J. M. EMMETT, President of Medical Society of Virginia
Introduction of Guest Speaker—MRS. E. LATANE FLANAGAN
Guest Speaker—MRS. EBEN J. CAREY, President Woman's Auxiliary to American Medical Association
Introductions—
President-Elect, Medical Society of Virginia, DR. C. B. BOWYER
Advisory Committee—
DR. W. E. BUTLER
DR. M. T. VADEN
Report on Resolutions—MRS. EUGENE L. LOWENBERG
Installation of Officers and Presentation of Gavel
President's Address—MRS. CLYDE WEST.
Adjournment
1:00 P. M.—Complimentary Luncheon—Place to be announced.
Celebrating the 21st anniversary of this organization—MRS. R. M. REYNOLDS, Chairman of Program
4:00 P.M.—Post-Convention Board Meeting, Hotel Roanoke
MRS. CLYDE WEST, Presiding

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

The Mind of the Injured Man. By JOSEPH L. FETTERMAN, M.A., M.D., Assistant Clinical Professor of Nervous Diseases, Western Reserve University School of Medicine, Cleveland, Ohio. Industrial Medicine Book Company, Chicago. 1943. x-260 pages. Cloth. Price $4.00

Reconstructive Surgery of the Eyelids. By WENDELL L. HUGHES, M.D., F.A.C.S., Hempstead, New York. St. Louis, The C.V. Mosby Company. 1943. 160 pages. Illustrated. Cloth. Price $4.00.

Convulsive Seizures. How to Deal With Them. A Manual for Patients, Their Families and Friends. By TRACY J. PUTNAM, M.D., Professor of Neurology and Neurosurgery, College of Physicians and Surgeons, Columbia University; Director of Services of Neurology and Neurosurgery, Neurological Institute of New York. Philadelphia. J. B. Lippincott Company. 1943. xv-168 pages. Cloth. Price $2.00.

The author has written this book for patients, their families and friends. This book should arouse enlightenment and hope in thousands of patients and their relatives who are daily confronted with grave problems. Answers are given to such questions as "What is epilepsy", "What are the chances of recovery", "Should the patient seek special occupation". The author proposes the answers in an educational manner. He aids the patient in understanding his status, gives him moral advice and helps him in gaining the best of insight, so as to live with relative security and with a sense of contentment. His advice against charlatan medical care is timely in guiding the poorly informed patient and his family against the false claims of their so called "cures".

The book is presented in a humanitarian sense. It has many economic motives. The patient is enlightened with the information that is presented in regard to diagnostic procedures, treatment and research that is being utilized for improvement so as to brighten his hopes.

"Convulsive Seizures" is not a technical book. The explanation is plain throughout; its guidance should encourage as well as give the best of determination to those who are daily confronted with Epilepsy in any of its forms. Physicians and medical students will find it interesting reading. Lastly, teachers who have to deal with epileptic pupils should find the book of practical value.

VINCENT EDWARD LASCARA, M.D.

The Principles and Practice of Industrial Medicine. Edited by FRED J. WAMPLER, M.A., M.D., M.P.H., Professor, Preventive and Industrial Medicine, and Administrator, Out-Patient Clinic, Medical College of Virginia. The Williams and Wilkins Company, Baltimore. 1943. 593 Pages. 34 Illustrations. Cloth. Price, $6.00.

This is a new book and one which will, to a large extent, answer many of the puzzling questions asked of the industrial medical officer. Dr. Wampler has done a good job of correlating the various workers in this field, and in getting their viewpoint, which has been done by the chapter method of the subject matter, each specialist in his field being responsible for the discussion of his own field in one definite place.

The thirty-two experts who contributed are medical directors of large plants, such as Merck, Eastman Kodak, Carnegie Steel, Dupont and others, along with sanitary engineers, and teachers of industrial and preventive medicine at leading medical schools. The industrial nurse and insurance specialist also have a voice in the book.

An outstanding feature of the book is that it is up to date and treats such subjects as women in industry, medical service in the smaller plants, fatigue, the medical examination, industrial lead exposure and poisoning, as well as exposure to toxic chemicals, the care of the eyes and occupational diseases of the skin. There are outstanding chapters on the handling of electrical hazards, the control of venereal diseases in industry and of especial value, the chapter on what industry can do to improve nutrition of the workers in a plant.

The subject matter is well arranged and well authenticated and should act as a ready reference to the physician and others having the charge of industrial workers as a whole. This book should be on the reference shelf of all doctors who are connected with industry in any way, as well as being available at the plant itself.

C. L. OUTLAND.

Flying Men and Medicine. The Effects of Flying Upon the Human Body. By E. OSMUN BARR, M.D. Funk & Wagnalls Company. New York. 1943. xv-254 pages. Cloth. Price $2.50.

To the average lay reader, "Flying Men and Medicine" by E. O. Barr tells, quite satisfactorily, the story of aviation medicine in simple English with a minimum of technical terms. Body structures and functions are briefly described and explained. A moderate number of illustrations will help the reader in understanding the various effects of flying upon body functions. The first part of the book deals with the nervous system and the sense organs, while the second and larger part considers respiration, circulation, and digestion. Although written for the layman, physicians who have given little thought to aviation medicine, will profit by reading the book

which discusses all important problems of this new medical science with the exception of the influence of acceleration upon circulation. The omission of this problem which is of utmost importance, especially if centrifugal acceleration occurs, is understandable since it is nearly impossible to discuss it in a non-technical language.

E. FISHER, M.D.

Reports of the Council on Pharmacy and Chemistry. Issued under the direction and supervision of the Council on Pharmacy and Chemistry of the American Medical Association. Cloth. Price, $1.00. Pp. 207. Chicago: American Medical Association, 1943.

Through the years the size of this volume has grown with the increased work of the Council on Pharmacy and Chemistry until the present edition has the same number of pages as the book published in 1908, which covered the Council's first four years of activity. Some of the functions of this group are well known, but a more thorough understanding of the Council's scope may be gained from the annual reprint. This volume epitomizes that phase of the Council's work which may be said to be collateral to the "acceptance" of drugs—the informative consideration of current medical problems in the interest of rational therapeutics. It contains reports of studies by private investigators which were originally published in The Journal under the sponsorship of the Council such as preliminary discussions of new developments in therapeutics and timely articles on the status of recognized agents as well as reports of omission or rejection of products from New and Nonofficial Remedies.

The reports in this small compact volume represent expert medical consensus and are proffered to aid in the consideration of the value of therapeutic agents.

Essentials of Syphilology. By RUDOLPH H. KAMPMEIER, A.B., M.D., Associate Professor of Medicine, Vanderbilt University School of Medicine; in Charge of the Syphilis Clinic and Visiting Physician to Vanderbilt University Hospital. With Chapters by Alvin E. Keller, M.D., and J. Cyril Peterson, M.D. Philadelphia. J. B. Lippincott Company. 1943. xvi-518 pages. 87 illustrations. Cloth. Price $5.00.

The author writes his book with the full intention of presenting the concept of syphilis as a systemic disease. It is of interest to the specialist, whatever the specialty, and to the general practitioner.

The problem of syphilis control is presented in the first chapter with the idea of awakening in the practitioner a sense of responsibility relative to the prevention and spread of the disease. He well emphasizes the necessity of better habits in history taking and the importance of physical examination.

Throughout his book he emphasizes the importance of better knowledge of the disease. The important fact of handling acute syphilis in a more systematic way is stressed. He shows why a clinical diagnosis alone is not justifiable. The critical evaluation of serological diagnosis is presented in detail. The importance of the spinal fluid examination is stressed with new views as to its importance in the handling of the syphilitic, and its value in prognosticating the future course of the disease process is touched upon. The physician is instructed to use the cerebrospinal fluid examination more often during the course of therapy, on completion of same, and during the after-treatment period.

The role that syphilis may play in chronic disease years after the infection was acquired is well illustrated, with the main point in view of reminding the physician of the importance of proper handling of acute syphilis as a prophylactic measure. New concepts are offered in the planning of antiluetic therapy.

Lastly he shows why the physician's responsibility in the control of syphilis does not cease when the patient is placed on treatment. The role he should play to help eradicate the huge infectious reservoir is well illustrated as to prevention and the interest he should display. The disease of syphilis is handled in its entirety. Each of its complications is treated separately as to diagnosis, prognosis and therapy. The education of the patient relative to the disease is well demonstrated as its importance in the control program. Many new concepts of the handling of the disease are given.

The author is to be commended on this text of such an important disease which is the basis of medicine. It is educational and I heartily recommend its study to all physicians and medical students.

VINCENT E. LASCARA, M.D.

VIRGINIA MEDICAL MONTHLY

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The Fifth Freedom

THE Atlantic Charter guarantees to half the world the four freedoms: freedom of speech, freedom of worship, freedom from want, and freedom from fear. Congress is now talking about a fifth freedom, the freedom of the choice of your physician.

Here in America we have always enjoyed this privilege; indeed, the free choice of the physician is the very cornerstone upon which American Medicine has been built. For the patient this means he will have the care of the best doctor in the world. He will have faith in the treatment outlined and the remedies prescribed. He will have the benefit of friendly and sympathetic understanding. This intangible something is more valuable than many of us realize. It is always a comfort to the patient and frequently saves his life.

From the doctor's point of view this freedom puts joy into what is often a hard and difficult task. When the patient pays you the greatest of all compliments, and we can conceive of no greater compliment than to put one's life unreservedly in your hands, no night is too dark or weather too bitter for you to render what service may be necessary. When, however, a third party or agency sends you, service after regular hours is apt to be grudgingly rendered, and neither the patient nor doctor is satisfied. This is true in large industrial plants where industrial medicine is misconstrued to include care of the employees when they are sick at home. Usually the employee calls in his own physician in preference to accepting the free services of the company-paid doctor. We also have a familiar example in the coal-mining districts. In order to get any doctor it is necessary to import one and put him on a salary. In addition, the company equips his office in the best manner possible, employs a nurse, and builds a hospital, yet neither patient nor doctor is satisfied with the arrangement.

Let us see what the Government proposes to do in regard to this fifth freedom, for after all, actions are more easily understood than words. Congress has recently appropriated $4,400,000.00 to provide maternity and infant care for the families of enlisted men in the Armed Forces. The program is already in operation in many States and provides, on a relatively small scale, an example of what will happen if the all-comprehensive bill S 1161 becomes a law. The Children's Bureau administers this fund through the state health agencies that are approved by the chief of the Bureau. The state health agencies must work in strict accord with the rules laid down by the Children's Bureau. In the case of maternity care it works as follows:[1] "The wife enters identifying data on the application form and takes it to the physician (private or clinic) of her choice. The physician completes the form and forwards it to the state director of maternal and child health (or his deputy), requesting authorization to provide the medical care needed at the rates of payment established by the state health agency ($35 for delivery). Physicians participating in the programs agree to provide the authorized services without charge to the patient or her family. . . . The state health agency reviews the request for authorization and usually within twenty-four hours notifies the patient, physician and hospital whether authorization is granted. Each case is referred to the local health department for antepartum and postpartum public health nursing services."

Her freedom of choice of a hospital narrows down to a hospital that has a ward service and, in addition, is willing to furnish ward service for 90 per cent of its cost. The doctor of her choice must attend her for half his usual fee and, in addition, must write to this "state health agency" and get permission to do so. Shades of Leon Trotsky! What is American Medicine coming to?

1. Daily, Edwin F., *J.A.M.A.*, 122:945, 1943.

The Army Medical Library

THE Surgeon General's Library, or the Army Medical Library, as it is now officially called, has been for generations in a class to itself. Not only is it the greatest collection of medical literature in the world, but its great catalogue and the Index Medicus and its successor, the Cumulative Index Medicus, the latter a joint undertaking with the American Medical Association, has made this collection, and incidentally other medical libraries, extremely useful. We doubt that many realize the full value of these indices. We have always had them, and like life, liberty, and the pursuit of happiness, we take them for granted. One should read Oliver Wendell Holmes' delightful essay on Medical Libraries to see what a library was like before the Index Catalogue. It was written in 1878 when the "Specimen Fasciculus of a Catalogue of the National Medical Library" had just made its appearance. Dr. Holmes compares "back volumes" that were not indexed to a "lock without a key, a ship without a rudder, a binnacle without a compass, a check without a signature, or a greenback without a goldback behind it".

It is hard to realize the wide scope of the Library's possessions. A number of years ago when the late Sir Kederath Das of Calcutta was the guest at a Washington meeting of the American Gynecological Society, we asked him what he wanted to see on his free afternoon. He replied that the only thing he really wanted to see in America was the Surgeon General's Library. When we reached the Library we introduced him to Mr. Toepper who showed us around. In the course of the visit he took us up in the stacks to the Hindoo section where there were more Hindoo books than Dr. Das had seen in

India. We were interested to hear that the most used books in Dr. Das' Library in Calcutta was the Index Catalogue. He had all three series. On another occasion we visited the Library with Professor Miles Phillips who is quite an authority on old books, especially those pertaining to the history of obstetrics. Dr. Claudius Mayer showed us some recent acquisitions from Russia, books that had belonged to the late Czar, and among them were Russian editions of old English obstetricians and men-midwives. Professor Phillips, who knew the works of these men well, could not believe that such editions of their work existed.

From our medical school days we have looked upon the Library as one of those perfect things that has existed as such always. It was quite a shock when we learned that before John Shaw Billings' time it was a collection of only a few thousand books. Colonel Jones, the present librarian, has a sketch of the early history of the Library together with its present status and future plans in a recent number of the *Journal of the American Medical Association,* (J. A. M. A. 122:1074, 1943). We were interested to learn that the Library has had its ups and downs. The low point of the Library occurred between the years of 1930 and 1936. Interestingly enough, the only book that we ever failed to find in the Library was published just before this period. While the war has postponed the erection of the new building, authorization for which has already been passed by Congress, it has benefited the Library in another way. The rare-book collection has been sent to Cleveland for safety. This gives some needed room in the old building which has long since been overtaxed, and it also affords an opportunity for rehabilitating these priceless volumes. Instead of being packed away in bombproof vaults, the rare books in Cleveland are being restored and are also available to students. Photostats and microfilms can be produced in Cleveland as readily as ever.

Medical Writing Under Difficulties

THE first issue of *The Chinese Medical Journal,* January-March, 1943, since Pearl Harbor has just made its appearance. The official organ of the medical profession in China is published in Chinese for circulation in Free China, and in English in the United States with the aid of the China Foundation. That a creditable journal, and indeed it is a very creditable one, could be produced under the difficulties that now exist in China, is truly remarkable. Most of the larger and better medical institutions in occupied territories have been closed. Many of the medical schools have been moved into Free China, but at a tremendous loss of equipment, supplies, and teaching personnel. The editor calls attention to the fact that writing in a foreign language without the necessary well equipped hospitals and laboratories in which to work and without proper library facilities is not productive of an overabundance of first class articles. He says nothing of the difficulty of printing and publishing the Journal on the other side of the world, but promises to do his best to uphold the high standards that the *Chinese Medical Journal* has always had. The "News and Notes" gives additional evidence, if any be needed, of the difficulties with which our Chinese confreres have to contend. For instance, in Shanghai where it seems the Chinese doctors are carrying on with their practices in spite of numerous emergency obstacles, Dr. W. S. Fu has borrowed a tandem bicycle. The doctor rides on the back seat while his former chauffeur pedals and steers in front.

Societies

The Williamsburg-James City County Medical Society

At its regular meeting on August 27, 1943, passed a resolution expressing its confidence and faith in Dr. G. W. Brown and his staff at the Eastern State Hospital.

As a medical group, interested in the advancement and progress of all phases of medicine, it wishes to express its recognition and gratitude to Dr. Brown and his staff for the many valuable contributions made in the field of psychiatry and especially in the promotion of this very important field in the state of Virginia.

The growth of the Lunatic Asylum of Williamsburg, when Dr. Brown became its Superintendent 33 years ago, to a modern psychiatric hospital today has been made possible only by the untiring efforts, efficient administration and the wise guidance of Dr. Brown. For this one-third of a century of unselfish devotion toward the alleviation of the mentally sick in Virginia, the citizens of Virginia, and especially the medical profession, are deeply indebted.

We wish to express our disapproval of the obviously unnecessary public investigation of the Eastern State Hospital which was instigated by the conscientious objectors employed there and we wish to concur with the resolution passed by the Williamsburg Post of the American Legion as to the elimination of these objectors.

One of the most important elements in the treatment of the mentally sick is the confidence, respect and hope that patients and relatives have for the hospital and doctors who are treating them. We feel that irreparable damage has been done to the hospital, and, indeed, to the progress of psychiatry in this state by the adverse and unjustified publicity which was brought about by the investigation.

It is quite timely, therefore, in view of the apparent lack of consideration of the above factors by the authorities who were responsible for the carrying out of this investigation and also in view of the general problems of state medicine that have come up for discussion in all medical groups, to suggest that the control of all state mental hospitals be put entirely in the hands of the medical profession rather than in the hands of laymen. This would certainly obviate much of the political coloring and decisions which are not compatible with medical progress. We hope that consideration be given to the above thoughts and suggest that the Medical Society of Virginia be given the control of the mental hospitals in this state.

It is also obvious that, before any further progress and improvement can be made in the state mental hospitals, that funds must be made available for the care of the mentally sick and more adequate appropriations made for the employment of additional personnel and for the increase of salaries of the existing personnel.

It is ordered that a copy of this resolution be sent to the Governor of the Commonwealth of Virginia, to the State Hospital Board, to the Medical Society of Virginia, the Eastern State Hospital, and the press.

Signed: A. M. SNEED, M.D.,
President.

The Fauquier County Medical Society

Met in Warrenton on August the 26th, with a good attendance from Fauquier, Loudoun, Prince William and Culpeper Counties. The president, Dr. V. L. McCullers, presided. This was the annual meeting and the following officers were elected: President, Dr. Stewart McBryde, Manassas; vice-presidents, Dr. George H. Davis, Warrenton, and Dr. Wade C. Payne, Haymarket; secretary-treasurer, Dr. J. Frank Folk, Warrenton, re-elected. Delegate and alternate to the State Society meeting were next named.

Dr. M. B. Hiden then introduced the guest speaker, Judge Howard Smith, member of Congress from the Eighth Congressional District of Virginia, who gave an interesting talk on the "Desirability of Rural Hospitalization Sponsored and Supported by the State". He was high in his praise of the work being done by the local hospital and brought out the necessity of similar institutions in other parts of this State.

The professional talk of the evening was by Dr. Walter E. Daniel, urologist of Charlotte, N. C., who emphasized the benefits and the dangers of the Sul-

fonamide Drugs. This was discussed by Dr. Richard Mason of The Plains, and Dr. John A. Gibson of Leesburg.

Dr. M. B. Hiden spoke briefly on the subject of "Payment by the State for Hospitalization of Indigent Maternity Cases and of Non-indigent Maternity Cases whose Husbands are in Military Service".

The meeting was followed by refreshments, games and informal dancing.

The Wise County Medical Society

Held its regular bi-monthly meeting on August 27th at Norton, with Drs. R. W. Holley and J. D. Culbertson, vice-presidents, presiding. There were 27 physicians present. Lt. Col. E. T. Trice, Richmond, gave a very interesting talk on the Virginia Selective Service System. Dr. H. E. Christenberry, Knoxville, Tennessee, spoke on related conditions seen in general practice concerning the eye, nose and throat.

Dr. J. J. Porter, Norton, is president and Dr. W. B. Barton, Stonega, secretary-treasurer.

Loudoun County Medical Society.

Officers for the Loudoun County Medical Society for the ensuing year are: President, Dr. W. O. Bailey of Leesburg; vice-presidents, Drs. H. A. Spitler of Middleburg and J. T. Jackson of Leesburg; and secretary-treasurer, Dr. G. H. Musgrave (re-elected) of Leesburg. At the last meeting, delegate and alternate to the State meeting in Roanoke were also named.

News

The Roanoke Meeting, Medical Society of Virginia.

The local committee, of which Dr. John O. Boyd is chairman, has completed plans for the meeting in Roanoke, October 25, 26 and 27, and there is every promise of a good attendance. An excellent program has been prepared and the guest speakers are men who have seen service at the front in the present war. They are Brigadier General C. C. Hillman, M.C., U.S.A., who will tell of "Medical Operations in the Pacific Theatres"; Captain Don S. Knowlton, M.C., U.S.N.R., whose subject will be "Medical Men in the Solomons"; and Captain J. Q. Owsley, (MC), U.S.N., the title of whose paper will be "Medical Aspects of Aircraft Carrier Warfare". The President, Dr. J. M. Emmett, has selected as his subject "Our Responsibilities to Organized Medicine". Other papers are on a variety of subjects and will all be presented in general sessions. A scientific session has been placed on Monday afternoon so as to do away with two sections on Tuesday morning, as it was felt this would add to the interest of the meeting.

On Tuesday, several of the specialty societies will have luncheon meetings and that evening there is to be a cocktail party followed by a subscription dinner at which there will be entertainment. The Medical College of Virginia Alumni will meet for breakfast on Wednesday.

Members who plan to attend are urged to make reservations in advance.

Promotions in the Service.

Dr. Walter B. Martin of Norfolk to colonel.
Dr. Guy C. Richardson of Bristol to major.
Dr. G. R. Joyner of Suffolk to major.
Dr. E. Bowie Shepherd of Richmond to major.
Dr. Thomas E. Painter of Pulaski to major
Dr. John H. Judson of Arlington to captain.
Dr. John W. Devine, Jr., of Lynchburg to captain.
Dr. Leo Solet of Arlington to captain.
Dr. Girard V. Thompson of Chatham to captain.
Dr. David O. Helms to captain.
Dr. Charles A. Young of Roanoke to commander.

Southern Medical Association.

Dates of the Southern Medical Association meeting in Cincinnati are November 16, 17, and 18. The opening day, Tuesday, will be devoted to general clinical sessions, and will be a Kentucky and Ohio day, with the program being made up of physicians from both the Kentucky and Ohio sides of the river. On Wednesday and Thursday, two general sessions

will meet concurrently, presenting medical and surgical specialties. There will be no formal section meetings this year, and all section officers will hold over for another year. There will be no discussion of papers but there will be a question and answer period following each paper. In keeping with the spirit of the times, the Cincinnati meeting will be devoted strictly to medical and surgical problems with no official or formal entertainment.

Married.

Dr. Jack Langford Ulmer and Miss Mary Christine Provine, both of Richmond, September 11th. Dr. Ulmer is now an associate in neurological surgery at the Medical College of Virginia.

Dr. Carrington Williams

Has been elected chairman of the Richmond Chapter of the American Red Cross. He is former chairman of the medical aid division of the Red Cross Disaster Relief.

Dr. Guy Hinsdale

Has moved to 1329 Rugby Road, Charlottesville. He was formerly medical director of the Greenbrier, White Sulphur Springs, W. Va.

Association of Military Surgeons.

Rear Admiral Ross T. McIntire, Surgeon General of the U. S. Navy, will serve as honorary chairman for the 51st annual convention of this Association to be held in Philadelphia, October 21-23. A symposium on war medicine, which will chart the progress and the recent advances made in the care of hospitalization of men in the armed forces will highlight the three-day meeting. Officials of the convention expect an attendance of more than 2,000 doctors now attached to the fighting forces.

The Upjohn Company,

Kalamazoo, Michigan, has made a grant of $25,000 a year for three years to the University of Illinois to be devoted to the academic study of the structural composition and possible synthesis of penicillin. This amplifies an earlier cooperative research project at that school and the bacteriological and other research which is being conducted at the Company's laboratories.

The hope of the future for the large scale economical manufacture of this important drug lies in the solution of the pure chemistry which alone would lead to the chemical synthesis of the substance. It is in the hope of achieving this end that the Upjohn penicillin fellowship at the University of Illinois has been established.

Changes at State Hospitals.

Dr. Joseph E. Barrett, recently connected with Southwestern State Hospital at Marion, has been appointed superintendent of Eastern State Hospital at Williamsburg, and has entered upon his duties there.

Dr. D. L. Harrell, superintendent of Petersburg Colony, will become superintendent of Western State Hospital at Staunton on November 15. Wr. W. I. Prichard, who has been one of the physicians at Western State Hospital, will at that time become acting superintendent of the Petersburg Colony.

Dr. John B. Bullard,

Richmond, announces that his offices are now located at 807 West Franklin Street, this city.

The Waynesboro Community Hospital

Recently elected the following new officers: President, Dr. D. E. Watkins; vice-president, Dr. F. P. Floyd; secretary, Dr. David W. O'Brien; and treasurer, Dr. Ernest Mosby. All are of Waynesboro.

Physicians as Artists.

Many physicians have hobbies and Mead Johnson & Company, Evansville, Ind., has published a very attractive volume, "Parergon" which depicts many of the artistic creations of physicians, such as sculpture, photographs, crayons, water colors, bronze, etc. Free copies are available to physicians upon request.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Pfaffman, M. & Stern, F.—How to teach nutrition to children.

Podolsky—The war on cancer.

Poffenberger, A. T.—Applied psychology; its principles and methods.

Polyak, S. L.—The retina.

Quigley, D. T.—The national malnutrition.

Rawling, L. B.—Landmarks and surface markings of the human body.

Reed and Geiger—Handbook of tropical medicine.
Reyniers, J. A.—Micrugical and germ free methods.
Riley, H. A.—Atlas of the basal ganglia, brain stem and spinal cord.
Rivet, P.—Les origines de l'homme Americain.
Ruch, Floyd L.—Psychology and life.
Sanger, Margaret Higgins—Margaret Sanger; an autobiography.
Schoenheimer—Physiological and chemical dynamic state of body constituents.
Shaffer, L. F.—Psychology of adjustment.
Sharr, C. M. & Krenz, F. P.—New Manual on treatment of fractures by external skeletal fixation.
Slavson, S. R.—An introduction to group therapy.
Smith, E. D.—Psychology for executives.
Stafford, G. T.—Sports for the handicapped.
Starch, D. & others—Controlling human behavior.
Stern, E. M.—Mental illness, a guide for the family.
Strong & Elwyn—Human neuroanatomy.
Thorndike, E. L.—Human learning.
Trueta, J.—Principles and practices of war surgery.
Turner, O. A.—A manual of neurohistological technic.
Walsh, J. J.—Thirteenth; greatest of all centuries.
Wampler, F. ed.—The principles and practice of industrial medicine.
Welfare Council of New York City—Hospital illness in N. Y. City.
Welfare Council of New York City—Hospitals and hospital patients in N. Y. City.
White, W.—Psychology of dealing with people.
Wilkie, Wendell L.—One world.
Wilson, Stephen—Food and drug regulation.
Winkler, J. K. & Bromberg, W.—Mind explorers.
Wolf, S. & Wolff, H. G.—Human gastric function. An experimental study of a man and his stomach.
Wright, R.—Hydrotherapy in psychiatric hospitals.
Zilboorg, G.—Mind, medicine and man.

Cadet Nurses Corps.

The Bolton Act, which has been passed by Congress, has created the United States Cadet Nurse Corps, which provides for grants-in-aid to nursing schools whereby the student nurse is relieved of the burden of tuition, fees and other expenses which she ordinarily would have to meet herself, and, in addition, is paid a monthly stipend. Schools participating in the program will continue to select their students and to plan and operate their own curricula. Certain requirements are specified with regard to standards of nursing education, acceleration of the curriculum, and agreement by each cadet nurse that she will continue in military or essential civilian nursing service for the duration of the war.

Full tuition and maintenance, including uniform, are furnished the cadet. In addition, a monthly stipend will amount to $15.00 for the first nine months of training, $20.00 during the next fifteen to twenty-one months, and $30.00 or more for the six to twelve months remaining before graduation.

Anyone who is interested in joining the Nurses Corps should inquire from the nursing school of her own choice as to whether it is participating in the program. She must be a high school graduate and other admission requirements vary according to the school.

Obituaries

Dr. James Oscar Meade,

Well-known physician of Mendota, died July 17th, having been in ill health for several months. He was seventy years of age and graduated from the Tennessee Medical College in 1898. Dr. Meade had practiced in Russell, Scott and Washington counties for forty-five years. He was a Mason and had been a member of the Medical Society of Virginia for thirty-nine years. His wife, three daughters and a son survive him.

Dr. Samuel A. Riddick,

Well-known physician of Norfolk, died September 9th. He was a native of North Carolina and sixty-six years of age. He graduated from the former University College of Medicine, Richmond, in 1899 and practiced in Smithfield until 1917. Dr. Riddick then served as attending army surgeon at the port of embarkation at Newport News until 1919, following which he located in Norfolk. He was a Mason and a member of the Medical Society of Virginia, having joined in 1902. His wife and a son survive him.

Dr. Alvah Ramsey

Died September 4th at the Veterans Administration Hospital near Hampton. He was a native of Pittsylvania County and sixty-eight years of age. Dr. Ramsey graduated from the former University College of Medicine, Richmond, in 1905, and was located at Crewe where he was senior surgeon for the N. & W. Railway. He retired from practice several years ago on account of ill health. He was formerly a member of the Medical Society of Virginia.

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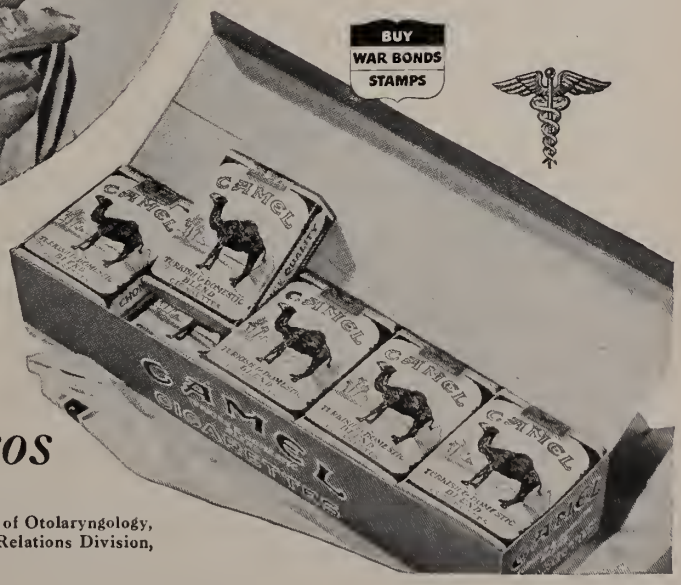

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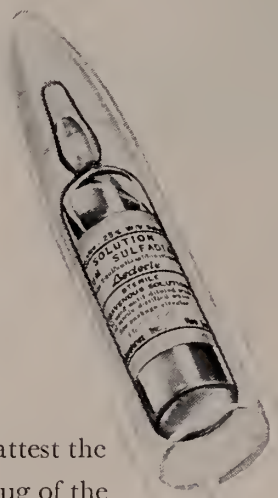

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Official Publication of the Medical Society of Virginia

November, 1943

THE N.Y. ACADEMY OF MEDICINE
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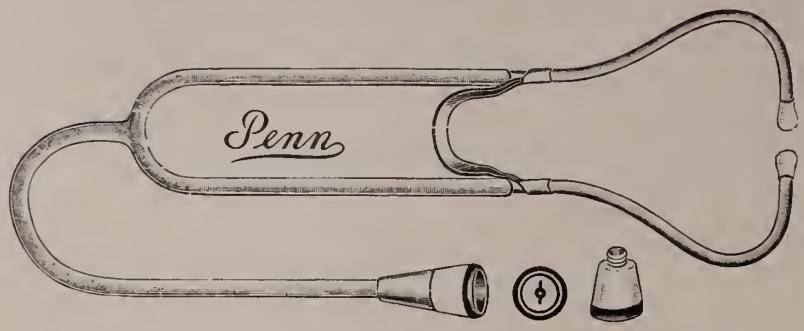

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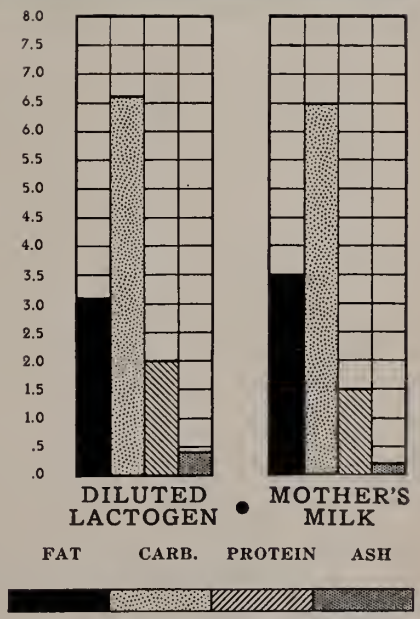

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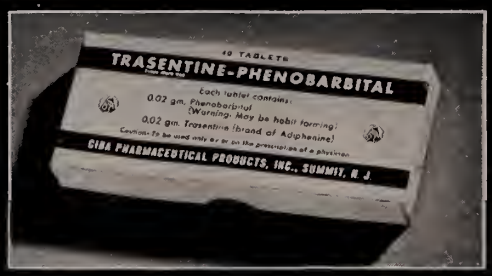

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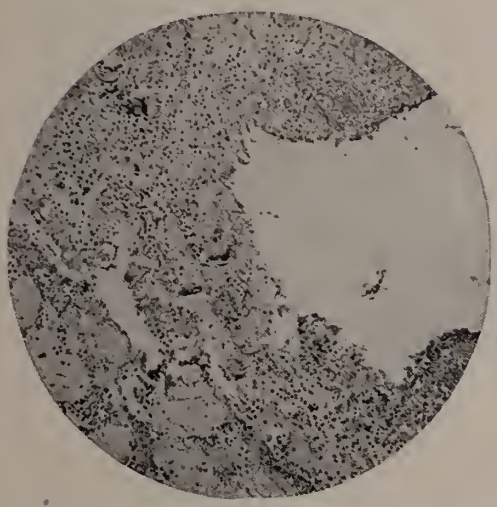

Photomicrograph showing cytological detail in acute lesion of mucosa of colon. Magnification x 650.

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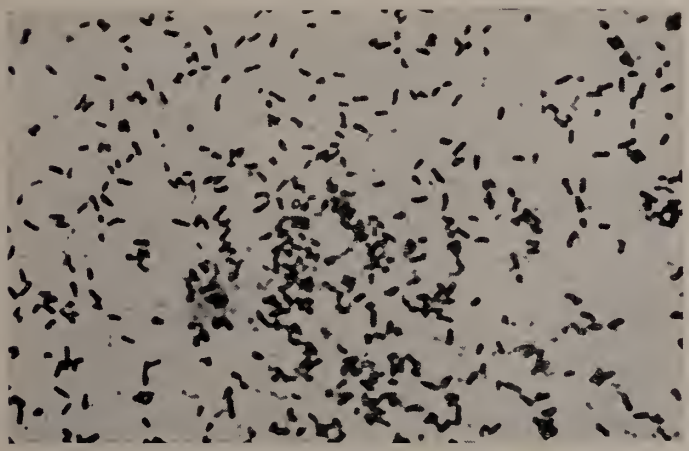

Photomicrograph of Dysentery Bacillus—Flexner—(*Shigella paradysenteriae*) Initial magnification x 1300.

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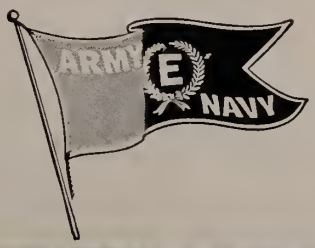

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Guest Editorial

Medical Regimentation

TODAY America stands at the Cross Roads: It is for her to choose one of two alternatives—

Shall we maintain our American way of life and standards of living, or, shall we adopt European collectivism with governmental control?

Jefferson's ideal in government was:

> "A wise and frugal government which shall restrain men from injuring one another, but shall leave them otherwise free to regulate their own pursuits of industry and improvement and shall not take from the mouths of labor the bread which it has earned."

The operation of our American system as idealized by Jefferson has brought us to the forefront of nations socially, economically and politically. The result of this system under which the individual has been left free to exercise his special talents in the fields of his choice is that the social and economic condition of the mass of our people is superior to that of any people on the face of the earth. They are better fed, better housed, better clothed, better paid, work fewer hours and have greater opportunities and facilities for recreation than are enjoyed elsewhere.

Under this system we believe in Social Security, but within reason, for after all social security is but the strength of the taxpayer, since the only source for its support is the tax revenues from individuals and industry.

Unless both the individual and industry are allowed to retain their incentive through equality of opportunity and freedom of enterprise the sources for the support of social security will dwindle and eventually dry up, since no new wealth will be created and there will be none to tax.

In spite of these axiomatic principles the apostles of the revised version of the "Gospel of the Common Man" have injected into our national life the thought that our American system is all wrong and that the government should be conducted principally for the benefit of a special class known as the "Common Man". Further, that through governmental control and direction of the individual and of industry the Common Man will be freed from all of those fears which have haunted man since he was driven from the Garden of Eden, viz: Freedom from fear, and Freedom from want.

This sounds like an invitation to the millenium and that is just what it is intended to be. Unfortunately, however, they do not tell us that this millenium will never take

place because long before the goal is reached the individual will have lost his initiative, industry will have slowed down, and the tax revenues will be insufficient to continue the program. When this happens the last state of these people and of all the people will be worse than the first.

Their proposal is that we surrender our equality of opportunity and freedom of individual enterprise for a governmental collectivism in which we will be directed controlled, coddled and protected through appropriate laws and regulations to be administered through officials and agencies.

In line with this, as an entering wedge with which to separate us from our American system, they have proposed for passage Senate Bill 1161, known as the Wagner-Murray Bill. This Bill under the cloak of an amendment to the present Social Security law, contains a proposal, which if enacted into law will strike at the very root of those liberties vouchsafed to us under our Bill of Rights, in that it will regiment the medical profession and place practically the entire profession, as well as the hospitals, research laboratories and medical colleges, under governmental control, and regulate the medical service and treatment of the larger part of our population.

Under this Bill, the present Social Security tax of 2 per cent, of which 1 per cent is paid by the employer and 1 per cent by the employee, will be increased to 12 per cent, of which 6 per cent is paid by the employer and 6 per cent by the employee on wages up to $3,000 per annum. Government employees will pay 3½ per cent and self employed, 7 per cent. It will enlarge its coverage to include domestic servants, farm laborers, soldiers in service, government, state and municipal employees, which it is estimated will increase those insured by approximately fifteen million persons. This tax, it is estimated by the Treasury Department, will return in annual revenues twelve billion dollars. Of this, some nine billion will be devoted to benefits and protection of employees and other persons who are covered, as well as for their dependents. The remaining Three Billion will be placed under the control of the Surgeon General of the Public Health Service, a political appointee, who will, through regimentation of the medical profession, of the hospitals, research laboratories and medical educational institutions administer medical service and treatment as well as hospitalization to an estimated one hundred and ten million people.

The menace of this bill to our free institutions is apparent when we visualize the tremendous power which will be placed in the hands of this one man, who has three billion dollars to administer, and who will hold in his hands not only our doctors and hospitals, but the education of our future physicians, as well as the life, death and health of over a hundred million persons.

The power is too great to be wielded by one political appointee or by any one man or group of men in a democracy such as ours.

To the unthinking its menace is not apparent, but those who give thought will discern within its supposedly benevolent frame-work, the spectre of absolutism in government reaching out to snatch from us those liberties for which our fathers died.

GEORGE E. HAW.*

*Mr. Haw is a prominent Richmond attorney and was president of the Virginia Bar Association for the year 1942-3.

OUR RESPONSIBILITIES TO ORGANIZED MEDICINE*

JOHN MOREHEAD EMMETT, M.D.,
Clifton Forge, Virginia.

It has been a real pleasure to have served you as the President of the Medical Society of Virginia in the past year. I am not unmindful of the distinctive honor which you did confer upon me and I am grateful to you for this confidence.

Because of the difficulties of travel and the added responsibilities of my own work, I have not had the privilege of visiting the various component county and municipal societies as I should have been pleased to do. I am confident, however, that you will be tolerant of this shortcoming of mine because you, too, have had added responsibilities and you must understand the difficulties which I have encountered. The privileges afforded me by virtue of this fine office have enabled me to gain a better knowledge of many of my professional friends and associates and I relinquish my duties as President of the Medical Society of Virginia with a great deal of admiration and personal affection for the group of excellent men who practice medicine in Virginia. Certainly no state in the Union could boast of a more admirable personnel.

It is a pleasure to pay my respects to our Executive Secretary, Miss Agnes Edwards, and her office force. By virtue of Miss Edwards' experience in the affairs of our Society, her keen sense of justice and her sound judgment, she has advised me wisely in the direction of the affairs of this office. I can recommend her counsel without reservation to the incoming officers.

I am grateful also to the men who have composed our vital committees during this past year. They have maintained a fine degree of interest and they have given unreservedly of their time and efforts in the behalf of our Society's affairs.

I desire to call your attention to the fine spirit of cooperation that exists between our profession and our State Department of Health. I am confident that this cordiality and understanding will continue so long as the Health Department remains under its present administration of Dr. Riggin. Dr. Riggin possesses a fine degree of evaluation of the problems arising in the practice of medicine and he has the desire and the ability to offer our profession much valued advice. I sincerely hope that his counsel may be available to you for many years to come and that his influence in the practice of medicine in Virginia may be perpetuated.

During the tenure of my office I have gained certain impressions and convictions which I want to discuss very frankly with you. It is my opinion that entirely too few of the doctors in our State feel a vital interest in the affairs of the Medical Society of Virginia. For many years the operation of the Society has been in the hands of only a limited group of men. Please understand that I know that without the untiring effort of this group of stalwart men our organization would necessarily have suffered and we owe this interested group a real debt of gratitude. I think, however, that there should be created in the minds of the profession generally a proper proportion of their responsibility to organized medicine and organized medicine as such begins first in our State organization. It is my belief that our future happiness and satisfaction in the practice of medicine will be in direct proportion to the efforts which we as individuals and as professional groups manifest in the affairs of the Medical Society of Virginia. Our Society needs the counsel of the best medical men in the State and the influence and support which these men can give the Society is vital to our organization's welfare. It is agreed, I believe, that all groups of doctors have appreciated the benefits of the practice of medicine and these benefits have largely come to us through organized medicine. Had organized medicine not functioned in some manner in the past, very probably the free practice of medicine would not exist in our country today.

It is disturbing to me to feel that even in view of the effort which we have put into our fight to curb the illegal practice of cults in Virginia, very few results have been obtained. Probably our laws are sufficient to take care of this problem, if such laws were popular and enforcible. It is possible, of course, that I do not have a proper evaluation of what has been accomplished by the efforts of our Legislative Committee in the past in regard to this problem because, had this Committee not functioned

*Address of the President at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

vigorously, one would not know how extensive the practice of the cults would be today. The facts are, however, that even today many of our most worthwhile people in the State manifest an interest in the protection of this illicit practice. I doubt our ability to pass any laws at this time which would remove from our midst this menace to the public welfare. This group of irregular practitioners have had an appeal to our people by emphasizing the fact that no opportunity was afforded them to become legalized, however anxious they might be to become legalized. Many of the members of our profession are today wondering if this matter could not best be handled by agreeing to some type of legislation which would create a Basic Science Board and all candidates of the practice of the healing arts be forced to meet the requirements of such a Board. I know that our Legislative Committee is giving this particular problem a very great consideration at this time. I, of course, appreciate that the creation of a Basic Science Board will not be what the cults desire. However, it will eliminate their battle cry of not having the privilege to become legalized. Many of the States are operating under a Basic Science law and it is my advice that such laws have been found effective in their operation. Our Governor has appointed a commission to study this entire subject and this commission is expected to make a report to the next Legislature. So far as I know, no one is aware of what position this commission, appointed by Governor Darden, will take in regard to this matter.

It is a great pleasure to commend to you that fine group of men who compose our Board of Medical Examiners. This Board of Examiners maintains an excellent and intimate relationship with our State Society. They have used every effort at their disposal to maintain a high standard for the practice of medicine in Virginia. The personnel of this Board has made a constant effort and sacrifice in many instances to carry out the mandates of the law imposed upon them.

All the suggestions that I have made seem to me to be dwarfed by a more serious situation which has occurred in our sphere of interest during the past few months. In June of this year Senator Wagner introduced in the Senate for himself and Senator Murray an amendment to the Social Security Act known as the Wagner Bill S.1161. A companion bill was introduced at the same time in the House of Representatives by Representative Dingell. The substance of these bills is directed at meeting the major economic hazards of the average American citizen through his entire life. This proposed legislation is said by its proponents to insure medical care and medical service to all wage earners without interfering with the choice of patient, doctor or hospital. This bill carries a payroll tax of 12 per cent divided equally between employee and employer. The Surgeon General of the Public Health Service is to administer this national health and hospital care program. We are told that this legislation is sponsored by powerful interests whose plan is to make every effort to make this legislation the law of our land. It is apparent that, if this bill is passed, the private practice of medicine will become a thing of the past. This entire matter should be viewed by us not as a personal threat to our present happiness and economic security, but rather from the angle as to what system of the practice of medicine is best for our people generally. We believe that we can give irrefutable evidence that the practice of medicine in America has done more for the welfare of the people in the past century than has accrued from all the efforts of creating a State of Social Security.

Homer Folks, writing in the S.C.A.A. News, says in part:

"The phrase 'social security' is a recent arrival. It has no one clear-cut definition. It would seem that it should mean 'Individual Security Through Social Action'. A large part of individual insecurity obviously arises from causes beyond the individual's control.

"Some men are born poor; some achieve poverty; and some have poverty thrust upon them; and the last is by far the largest group. Obviously society may operate in various ways in reducing individual insecurity. . . .

"But social insurance is only one form of social security. The Beveridge Report is in fact entitled 'Social Insurance and Allied Services'. What are some of these allied services? How valuable are they, how long have they existed, how dynamic are their contributions to social security, how susceptible are they to further extensions? . . .

"Clearly, nothing has promoted social security, dependability of income, personal adequacy, and efficiency in meeting the responsibilities of life more than the prevention of smallpox, tubercu-

losis, diphtheria, syphilis, catastrophes related to childbirth, pneumonia, and the like. No provision for the care of the sick and the maintenance of widows and orphans can compare for a moment, as a measure of social security, with the prevention of disease. We face here a fundamental difference in philosophy and in method, which seems to have been very often greatly underestimated, or even overlooked, by the promoters and framers of social insurance measures. The forgotten factor is the dynamic value of preventing misfortune, loss of income-producing capacity, and social insufficiency, instead of, to a degree, regarding such losses as inevitable and devising measures for spreading their incidence over large groups and periods of time.

"It is not fanciful to see an 'insurance psychology' which loses sight of that valuable distillation of human experience—an ounce of prevention is worth more than a pound of cure. It is, of course, not a question of 'either or'; it is a question of practicabilities and possibilities of both at any given time. . . .

"Certainly one of the most important tests by which all these social security plans should be judged is as to how, and to what extent, they promote public health. It must be admitted that, on preliminary reading, both the British and the American plans are, as compared with their other subject-matter, definitely vague as to the all-important subject of public health. The term 'public health' may be considered as including mental hygiene, though that term does not seem to appear in either report. Mental disorder certainly calls for a lot of hospital care, roughly equivalent to all other types of hospital care put together. It breaks up more families, destroys more individual efficiency, spoils more personal plans, and causes more social wreckage than any other type of illness, possibly more than all other types put together. The fullest application of our all too scanty knowledge of the causation, possible prevention, and suitable diagnosis and treatment of mental disorders should certainly have a large place in plans to promote individual security through governmental action."

I cannot feel that we would show any degree of wisdom if we approach this virile subject with a deaf ear and portray a feeling of self-righteousness and complete satisfaction. Possibly concessions must be made by us and changes in our present system may be warranted. I am confident that the medical profession will show a willingness to corroborate with other interests in this subject when it may be shown that the new suggestions warrant a change in our practice because of benefits to the masses which will occur as a result of such changes. It might be said, however, that I do not feel that any suggestion that carries with it the destruction of the relationship between doctor and patient or the elimination of the question of personal incentive on the part of the doctor will merit our approval or adoption. In every instance where these vital factors have been ignored the people first have felt the change and later the medical profession has shown evidences of stagnation. This deduction must be concurred in when one remembers how anxious have been excellent physicians from other countries having a social system of medicine to come to America for practice. This desire of foreign physicians to locate in America was true before this miserable war was forced upon us.

Just what such concessions should be agreed upon or what changes should be made in our present method of practice I am sure I do not know. Even in our own State I am convinced there is no unanimity of thought upon this subject. It is my belief that interests may best be served by having this matter watched and studied by the best minds in our profession. With this thought in mind I am asking the Council to create a new and permanent committee whose responsibility will be to keep themselves posted on this entire subject and further to cooperate with any other state or national medical agency whose object is to improve the health of our people and to maintain the essential and cordial relationship necessary for an alert, happy and worthy medical profession. Even granting that this proposed Wagner Amendment to the Social Security Act is defeated (which defeat is not assured), there will probably be recurrent efforts to regiment the medical profession and to render it a politically controlled body. With our victorious ending of this war, efforts will be directed towards the establishment of a peace whose object is easy, economic security for everyone. In justice to our colleagues who have given up their practice to go voluntarily into the service of our country, it behooves each of us to carry on this effort towards the protection of the medical profession in a fair and intelligent manner

so that when these men return home they may have the same opportunities in their practice which they left in our hands for safe keeping. In this battle we will have few allies. Our assistance must come from an intelligent and properly educated public on this particular subject. Each of you has a responsibility. Few mistakes can be tolerated on our part if we are to maintain our identity.

THE DOCTOR'S BAG[1]

Doctor Harry Gold of the Department of Pharmacology, Cornell University Medical College, examined the bags of seven doctors, most of whom practiced in the center of New York City. The contents were found to vary a great deal; one bag had only four items, another as many as 21. Gold has drawn up the following list of drugs which he feels, while not complete, comes fairly close to meeting every emergency condition in which a drug may be helpful or even decisive.

1. Hypodermic tablets of amorphine hydrochloride, gr. 1/10.
2. Syrup of ipecac.
3. Morphine sulfate, gr. ¼ tablets.
4. Digitaline Nativelle, 0.2 mg. tablets.
5. Ouabain, 2 cc. ampules, each containing 0.5 mg. ouabain.
6. Tablets of phenobarbital, gr. ½.
7. Capsules of pentobarbital sodium, gr. 1½.
8. Ampules of phenobarbital sodium.
9. Ethyl chloride in a spray tube.
10. Ampules of 50 per cent dextrose, 50 cc.
11. Ampules of mecholyl, 25 mg. each.
12. Hypodermic tablets of atropine sulfate, gr. 1/150.
13. Tablets of quinidine sulfate, gr. 5.
14. Ampules of quinine dihydrochloride, 20 cc. containing 32 mg. quinine dihydrochloride.
15. Ampules of mercupurin, 2 cc. (or some other organic mercurial diuretic).
16. Ampules of theophylline ethylene-diamine, gr. 3½ in 10 cc.
17. Ampules of epinephrine 1:1000 solution, 1 cc. each.
18. Ampules of ergotamine tartrate 1:1000 solution, 0.5 mg. per cc.
19. Ampules of solution of posterior pituitary, 1 cc.
20. Vial of insulin.
21. Hypodermic tablets of nitroglycerine, gr. 1/150.
22. Pearls of amyl nitrite.
23. Alcohol, 70 per cent.
24. Sterile packets of sulfanilamide powder.
25. Tablets of sulfadiazine, gr. 7½.
26. Tablets of aspirin, gr. 5.
27. Solution of ephedrine sulfate 1 per cent (any of the substitutes belonging to this class of preparations will do).
28. Solution of picrotoxin, 0.3 per cent solution, 20 cc.
29. Solution of pontocaine, 1 per cent solution.
30. Ampules of calcium gluconate, 10 per cent solution, 10 cc.

H. B. HAAG.

1. Conferences on Therapy, *New York State Journal of Medicine,* 43:1435-1440, 1943.

THREE SUCCESSFUL CASES OF TOTAL GASTRECTOMY*

J. SHELTON HORSLEY, M.D.,
Richmond, Virginia.

Until a few years ago total gastrectomy was an extremely rare operation, and even now it is uncommon. In 1929 Waltman Walters reported a successful total gastrectomy in the Proceedings of the Staff Meetings of the Mayo Clinic, and said that including his own case there were only 70 cases recorded in the literature. Felix de Amesti (de Amesti, Felix: Total Gastrectomy for Cancer—*Annals of Surgery, 117*: 183-190, Feb., 1943) in a paper published in 1943 stated that about 240 total gastrectomies had been recorded in the literature of the world. It is highly probable, however, that the number of total gastrectomies is much greater than this. Many of these operations have doubtless been performed that were unsuccessful and have not been published, partly at least because reporting the failures did not seem to add anything of value to the cause.

1.—Case 1. Drawing of external view of total gastrectomy. At the lesser curvature is shown the area of involvement of the pancreas. There are enlarged lymph nodes along the lower border.

The two chief reasons for the rarity of this operation have been the high operative mortality and the opinion that the hemopoietic process was adversely affected by removing all of the stomach. However, a better selection of cases, improved pre-operative and post-operative treatment, and changes in the technic have greatly lowered the mortality rate.

Experimental work by Mann, Ivy, Dragstedt and others has demonstrated that it is impossible to produce in laboratory animals pernicious anemia by total gastrectomy. In an excellent paper on total gastrectomy by Farris, Ransom and Coller (Farris, J. Matthews, Ransom, Henry K., and Coller, Frederick A.: Total Gastrectomy: Effects Upon Nutrition and Hematopoiesis—*Surgery, 13*: 823-832, June, 1943), careful observations are recorded on four patients who survived total gastrectomy for more than two years. One patient at that time was living and in good health four years and seven months after operation. These authors state that the anemia resulting from total gastrectomy, or even sometimes from partial gastrectomy, is not the macrocytic or pernicious type of anemia, but is distinctly hypochromic microcytic or secondary anemia, which is usually associated with iron deficiency. It is well known now that organic iron in food is not available for absorption unless released by peptic or tryptic ferments. This holds true equally if there is achlorhydria. Ferrous iron (sulphate, chloride or carbonate) seems to be the only form in which iron is satisfactorily absorbed from the alimentary canal. According to these writers, the administration of ferrous sulphate three times a day for one week out of every month prevents this secondary anemia. After a few months the patient is able to take practically any kind of food, though it must be in smaller quantities and at more frequent intervals.

I have performed 15 total gastrectomies. The first was in 1929, the same year that Walters reported 70 cases then in the literature. My twelfth case was operated upon March 11, 1942. All of these 12 patients died following operation. All operations were for extensive cancer except one which was for multiple ulcers, one of them a large perforating ulcer in the cardiac portion of the stomach. Two of the deaths were from pneumonia, one from shock, one from a volvulus of the bowel between the entero-enterostomy and the esophagus, and one from thrombosis of the superior mesenteric vessels. The

*Read at a meeting of the Richmond Academy of Medicine, September 28, 1943.

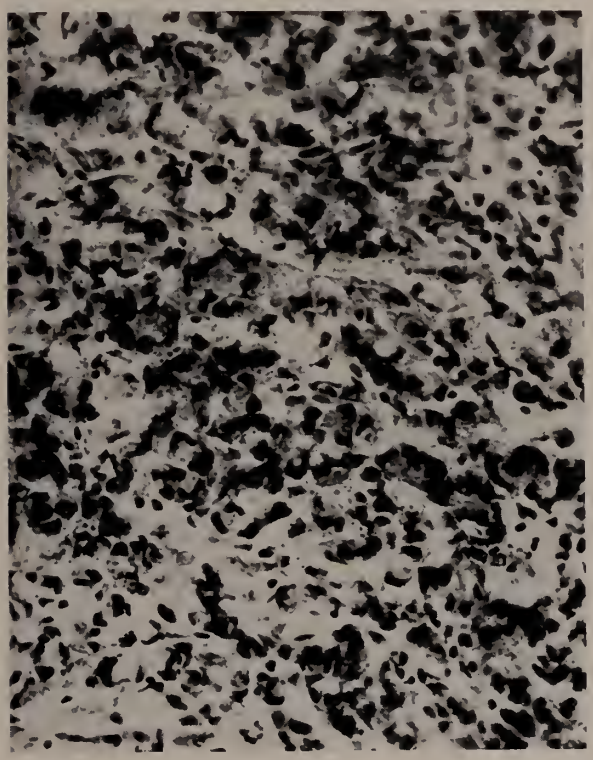
other deaths were from infection, subdiaphragmatic abscess or general peritonitis. In four patients the sepsis resulted from a leak at the suture line; in the others sepsis apparently developed independently of a leak. Several of these cases, especially the earlier ones, had very extensive carcinoma and should not have been operated upon, as post mortem examinations disclosed residual carcinomatous tissue in the pancreas or in the region of the gastrectomy. In all of these cases except one—a death from shock—a post mortem examination was made.

2.—Case 1. The stomach has been opened and the extensive ulcerated cancer along the lesser curvature is shown. The inset shows the portion of the pancreas that was removed with the stomach.

During this year I have performed three total gastrectomies, and all of them have made satisfactory operative recoveries.

There have been numerous additions to the technic of total gastrectomy. Charles Bruce Morton (Morton, Charles Bruce, II: Total Gastrectomy: Its Indications and Technic—*Surg., Gyn., and Obst., 75*: 369-373, Sept., 1942) has given a very clear description of the technic that he has successfully employed. Lahey (Lahey, F. H., and Marshall, S. F.: Combining Splenectomy with Total Gastrectomy—*Surg., Gynec. and Obst., 73*: 341-344, 1941) has shown that the spleen can be removed with apparently no deleterious effect upon the outcome of the total gastrectomy. This is a significant observation, because not infrequently the spleen may be closely attached to the stomach or may be injured. Allen (Allen, A. W.: Carcinoma of the Stomach with Special Reference to Total Gastrectomy—*Ann. Surg., 107*: 770-782, 1938) made an important contribution in suturing the loop of the jejunum

to the diaphragm in order to prevent traction upon the sutures to the esophagus. Probably one of the most important recent contributions to the technic is that of Roscoe Graham who advocates severing the vagus nerves, bringing down the esophagus by blunt dissection with the finger, and suturing a loop of jejunum parallel to the terminal esophagus. A transverse incision is made in the jejunum about an inch below the suture line, the esophagus is then divided and the end of the esophagus is implanted into the



3.—Case 1. Photomicrograph of the cancer shows numerous irregular cells, many with eccentric nuclei. There is a moderate amount of colloid x 360.

incision in the jejunum. This makes a buffer behind the esophagus which would seem to forestall leakage at this point. (Graham, Roscoe R.: A Technique for Total Gastrectomy—*Surg.*, *8*: 256-264, August, 1940).

The technic that I employed in these three successful cases is a combination of different features that have been developed by others and the results of observations in the necropsies of my patients who died. In one of these three cases, local anesthesia was used, and in the other two ethylene with a small amount of ether was given. Since the death by volvulus of the jejunal loop, the afferent limb of the loop of jejunum is united to the stump of the duodenum. This not only makes a three-point fixation of the jejunal loop and prevents volvulus, but offers an easy exit for the duodenal contents.

The suggestion by George Grey Turner of severing the bloodless coronary ligament of the left lobe of the liver and packing off the left lobe toward the

4.—Case 1. X-ray plate on June 19, 1943, twenty-two days after operation. Note the ample opening between the esophagus and the jejunum. The tube which was inserted at the time of operation has passed from the region of the anastomosis. An x-ray plate three days later showed the tube in the lower small intestine.

right side offers a much better field of the esophageal opening. The gastrocolic omentum is doubly clamped and divided in segments from the duodenum to the spleen. The attachments to the spleen are divided up to the esophageal opening. If the spleen is very close to the stomach or is involved in the malignant process, or if it is injured, it can be readily

removed, as Lahey has shown. The attachments along the lesser curvature are also clamped and divided in segments. All of the clamped segments are transfixed and tied with catgut. The duodenum is doubly clamped and divided just distal to the pylorus. If a Jutte or Levine tube has been inserted into the stomach, the gastric contents are aspirated, the duodenal tube is withdrawn, and a soft rubber catheter is placed around the terminal esophagus as a tractor and to prevent reflux of further gastric contents. When the stomach is adherent to the pancreas this procedure must be varied. The involved portion of the pancreas may be dissected off, leaving it attached to the stomach. This is preferably done with the hot electric cautery. The pancreatic involvement usually occurs about the region of the gastric artery which should be clamped and severed before this dissection. The esophagus is mobilized, according to the technic of Roscoe Graham, the vagus nerves are cut, and the esophagus is pulled well down below the diaphragm. A loop of jejunum, amply long, is brought over the colon, laid parallel with the esophagus, and sutured with cotton to its posterior surface close to the diaphragm. About an inch below the suture line an incision is made in the posterior wall of the esophagus and a transverse incision is made in the jejunum. The adjacent margins of these two wounds are united with a continuous suture of cotton.

A rubber tube having a lumen diameter of ¼ of an inch, about four inches long with an extra opening near each end is fastened in the anastomosis by a suture of chromic catgut. This, I believe, is an important step in the operation in order to provide an immediate and adequate exit for the esophagus. The esophagus is then completely severed and the cotton suture is continued anteriorly, and tied to its original end. Another row of continuous sutures is placed anteriorly between the jejunum and the esophagus, drawing up as much of the efferent loop as possible, and then a third row of interrupted mattress sutures of fine chromic catgut is placed, bringing up the jejunum still farther. The ends of these last sutures are left long and a strip of omentum is carried around the anastomosis and the long ends of these mattress sutures are passed through the omentum. If omentum cannot be obtained, the anterior surface of the jejunum is sutured to the diaphragm just in front of the esophagus. The afferent or right loop of jejunum is united to the stump of the duodenum by an end-to-side method of anastomosis.

An entero-enterostomy is made between the two limbs of the jejunal loop as they pass over the transverse colon. This is done by a rubber band technic which makes it not only simpler but safer. It is practically an aseptic method. The two limbs are fastened together with a continuous suture of chromic catgut, and an ordinary rubber band No. 32 in a large round needle is passed through first one limb of the loop and then through the other near the line of sutures. A second band of the same size is also passed through the bowel on one side that is embraced in the first rubber band, and a third rubber band is passed through the bowel on the other side that is embraced by the first rubber band. An incision is made in the peritoneal and muscular coats of the portion of the intestine embraced by the last two bands, and these bands are tied down snugly, and the first rubber band is tied tightly. The suture is then continued anteriorly and tied to its original end. A few interrupted sutures of catgut are placed for additional security.

Several inches below this a mushroom catheter is inserted in the efferent loop and brought out through a stab wound to the left of the abdominal incision. The bowel around this catheter is sutured to the parietal peritoneum. Some sulfanilamide and sulfathiazole are placed in the peritoneal cavity. The abdominal wound is closed with interrupted sutures of malleable stainless steel wire through all of the abdominal wall except the skin and subcutaneous fat. The skin is sutured with cotton.

The patient receives a blood transfusion, and intravenous dextrose in Ringer's solution is given almost continuously for about two days unless the blood pressure tends to be elevated or there is pulmonary congestion.

The three cases that have been operated upon by this method are as follows:

Case 1. Mrs. W. B. L., age 50 years, was admitted to St. Elizabeth's Hospital May 24, 1943. She gave a history of having had "stomach trouble" for twelve months and had lost 25 pounds in weight. She had had pain four or five hours after eating. There were nausea and vomiting, with relief after vomiting. On admission gastric analysis gave free hydrochloric acid 10, 30, and 70 in the three half-hour specimens. The blood examination showed hemoglobin 75 per cent, r.b.c. 4,070,000; w.b.c.

7,650. The operation as described was performed on May 28, 1943. It was necessary to remove the spleen. There was involvement of the pancreas near the region of the gastric artery. The adherent portion of the pancreas was excised with the hot electric cautery. She made a very satisfactory recovery; her temperature was never above 99.8° except on June 10 when she had an attack of pyelitis. She was discharged from the hospital on June 24, 1943. Her family physician, Dr. E. L. Johnson, of Bedford, Virginia, who referred the patient, reported on September 1, 1943, that she was in very good condition and doing much of her house work. A letter received from the patient on September 8th says she has an excellent appetite, can eat almost anything, usually has some discomfort for a short time immediately after meals, and is feeling quite well. This discomfort is doubtless due to distention of the jejunum, and should disappear (Figs. 1, 2, 3 and 4).

Case 2. Mr. R. T. C., age 64 years, was admitted to St. Elizabeth's Hospital on July 12, 1943. He gave a history of intermittent severe epigastric pain for several years. The pain had been worse during the past eight months, during which time he had lost 40 pounds in weight. For the past two weeks there were repeated gastric hemorrhages. On admission to the hospital his hemoglobin was 24 per cent, r.b.c. 2,070,000. On the following day he had hemiplegia of the right side. Numerous transfusions were given with only a temporary rise in the hemoglobin. Gastric analysis gave no free hydrochloric acid in any of the three half-hour specimens. Roentgenologic examination showed marked gastric retention. The examination was repeated several days later, but was not satisfactory as the paralysis prevented manipulation. It was apparent that the patient would bleed to death. On August, 3rd, 22 days after admission, he was operated upon, under local anesthesia. Like the previous case there was a slight invasion of the pancreas in the region of the gastric artery. This affected portion of the pancreas was dissected off, attached to the stomach after clamping and dividing the gastric artery. The cancer was extensive. The operative technic described was used. He made a satisfactory recovery, his temperature was never above 100.5°. He left the hospital on August 25, 1943, 22 days after operation. His paralysis had somewhat improved, and his general condition otherwise was very good.

Case 3. Mr. W. M., age 60 years, was admitted to St. Elizabeth's Hospital on August 31, 1943. He gave a history of general weakness, substernal and epigastric discomfort for the past six months, with a loss of 12 pounds in weight during that time. On admission to the hospital the blood examination showed hemoglobin 48 per cent, r.b.c. 3,450,000, w.b.c. 6,000. Gastric analysis gave no free hydrochloric acid in any of the three half-hour specimens. Roentgenologic examinations revealed a very extensive gastric lesion. He was operated upon September 3, 1943, under ethylene anesthesia, by the technic described above. His gall-bladder, while not involved in the neoplasm, was very tense and adherent and was removed. There was extensive cancer along the lesser curvature. He made an uneventful recovery.

After losing 12 consecutive cases, having a successful operative outcome in three consecutive total gastrectomies is gratifying in a way. But in looking back, it is somewhat humiliating to think that if this technic had been adopted in those patients that died, many would doubtless have recovered. The important improvements in this technic, aside from the general preparation of the patient and the selection of the case for operation, are the adoption of the principle of the Roscoe Graham method of making the esophago-jejunal union and the insertion of a large rubber tube in the anastomosis which permits the telescoping of the esophagus into the jejunum without occluding its lumen. A transverse incision in the jejunum should tend to prevent a stricture, as the pull of the severed external longitudinal muscular fibers everts the mucosa. Uniting the right limb of the loop of the jejunum to the stump of the duodenum, the aseptic entero-enterostomy by rubber bands, and placing sulfanilamide and sulfathiazole in the peritoneal cavity are also important.

SOME FACTS AND FALLACIES IN THE DIAGNOSIS AND TREATMENT OF CERTAIN PHASES OF PULMONARY TUBERCULOSIS*

S. E. HUGHES, M.D.,
Danville, Virginia.

A few years ago I had quite a friendly controversy with a colleague who made the statement, in discussing the case of a high school student, that he could look at her and see that she had an active pulmonary tuberculosis and should be in a tuberculosis sanatorium for treatment. I listened to what he had to say but could not agree with his diagnosis, as I thought he was far ahead of the time in his assumed diagnostic ability.

The Creator of Man endowed him with five senses for his protection, comfort, pleasure and the acquisition of knowledge. For a good many years I had been cognizant of the fact that the trained eye to see, and the mind trained to interpret what the eye portrayed, could, by careful inspection of the chest, with all clothing removed to the waistline, pick up favorable leads to the underlying pathological condition in the chest, more particularly, perhaps, in pulmonary tuberculosis. When careful inspection is supplemented by the fundamental factors of family, personal history and a thorough physical examination of the chest, one has a good foundation for the x-ray and laboratory aids, and possible diagnosis, depending somewhat on the character and location of the density or infiltration shown on the x-ray plate. This is not always conclusive, as I shall try to demonstrate in the course of my further remarks.

Under the modern, stream-lined methods, approved and adopted today by the public health authorities of many of our cities and states, the x-ray is the Alpha and Omega of the complex problem of diagnosing pulmonary tuberculosis. I say complex problem for the well known reason that lung pathology shown on the x-ray plate not infrequently requires weeks of study and observation by men of training and experience in the diagnosis and treatment of pulmonary tuberculosis, with all the aids known to medical science at their command, to determine the cause of the pathology, and their final conclusions are reached, in not a few cases, by the process of elimination.

Clinical history and physical examination, both considered important in the past in the diagnosis of a disease killing thousands of the young manhood and womanhood of America annually, have been relegated to the medical scrap-heap as non-essential. If one is ready to accept the modern-day diagnosis, so much in vogue, of one of the most fatal maladies the world has ever known, I think one could, without insult to his imagination, visualize at no distant day some over-enthusiastic public health official with an imaginary gift of prophecy and a radioscopic eye, lining up the students of a high school or the employees of some industrial plant and, with a stick of chalk in his hand, pass along the line labeling some positive, some negative, some healed and some suspicious cases of pulmonary tuberculosis.

This statement may appear a bit facetious or it may seem that I have over-drawn the picture. If so, let's see what certain authorities have to say on the subject. I have a letter in my possession from the Medical Director of the oldest and best known institution in America, in which he says: "Diagnoses in pulmonary tuberculosis today are made on x-ray plates only, without, in many instances, proof of infection on the basis of probability, even though you have tubercule bacilli in the sputum and have a definite x-ray lesion in the lung. Your major lesion may be due to something other than tuberculosis, and the tubercule bacilli more or less incidental."

In Dr. Goldberg's two-volume work on tuberculosis, published in 1942, the following was said of diagnosis: "The important factors in establishing a diagnosis in pulmonary tuberculosis are readily seen to be dependent upon more than one examination, one as important as the other. The history may be the first lead to the diagnosis. Physical examination and the x-ray are important, but we wish to impress the reader with the fact that x-ray, though important in itself, cannot definitely substantiate the diagnosis of pulmonary tuberculosis."

A very interesting article by two members of the

*This paper was prepared for presentation before the Piedmont (Va.) Medical Society at its scheduled meeting, April, 1943. Due to the exigencies of war, this meeting was postponed indefinitely.

staff of the Trudeau Sanatorium appeared in the *Journal of the American Medical Association* on June 27, 1942. A rare but puzzling problem arose at the Trudeau Sanatorium because of the admission of patients with a history of acid-fast bacilli having been found in their sputum but the x-ray films failed to show any definite parenchymal lesions. In an effort to clear up the situation and for future guidance in handling such cases, the admission records for the preceding thirty years were reviewed and one hundred cases of this type were found. In fifty-five of the cases tubercle bacilli were found in the sputum in outside laboratories. In forty-five cases tubercle bacilli were found while the patients were in Trudeau Sanatorium. Ninety-seven of the one hundred cases on admission gave a history of one or more of the cardinal signs or symptoms of pulmonary tuberculosis, such as pleurisy with effusion, rales in the upper part of the chest, apical rales, hemoptysis, streaking, chronic fatigue, cough, expectoration or a low-grade fever. In all of these cases radiographic studies failed to confirm a diagnosis of pulmonary tuberculosis. In the follow up of these cases several relapses occurred after discharge from the sanatorium, showing conclusively that the diagnosis of pulmonary tuberculosis was correct.

In his annual address in 1941, the President of the National Tuberculosis Association had this to say regarding the diagnosis of pulmonary tuberculosis: "In spite of the improvement in x-ray equipment and in spite of all that has been learned about the interpretation of x-ray films, the x-ray does not take the place of physical examination or make it unnecessary to take a careful clinical history. We feel that medical students should be taught the rudiments of interpretation of x-ray films, but we feel very strongly also that they should be taught physical examination and history taking. They need to be taught that the x-ray does not replace but supplements physical examination, clinical history and laboratory studies."

Frequently we have pulmonary lesions due to causes other than infection by the tubercle bacillus, but which may closely resemble tuberculosis from an x-ray standpoint and which are differentiated only by very careful study. Neoplasms, residuals of certain virus infections, yeast or fungus infections, unresolved pneumonias, atypical lung abscesses, silicosis, asbestosis and pneumoconiosis are a few of the non-tuberculous lesions that may prove confusing and, since none of these lesions are labelled, diagnostic aids other than x-ray must be called upon to make a diagnosis. On the other hand, in tracheo-bronchial tuberculosis and tuberculous lesions behind the heart or mediastinum, in both of which conditions the sputum is frequently positive, there are no abnormal radiographic findings and it is impossible to make a diagnosis by means of an x-ray examination.

In 1942 the health authorities in a small Virginia city put on what they called a "Tuberculosis Survey," with the usual propaganda and over-emphasis on the value of an x-ray plate in the diagnosis of pulmonary tuberculosis. During the survey 932 citizens of various ages and sizes reported at a designated place for the x-ray and diagnosis. I understand that the 932 applicants were lined up and passed through the picture-making mill at so many per minute, and 932 embryonic prints of the lungs were turned out. These prints were sent elsewhere for growth and development and returned to Richmond, Virginia, where they were read and broken down, according to a press report, into definite classifications of negative, active, healed and suspicious cases of pulmonary tuberculosis. My reaction, after reading the report, was that such phenomenal power was only enjoyed by the superhuman and that the analytical diagnostic ability manifest in this instance must have been a special gift from the Gods.

We are perhaps spending, from all sources in the State, some two or three hundred thousand dollars annually for field work in tuberculosis, yet very little is said about treatment. Our state institutions are filled to capacity, most of the time with waiting lists. Statistics published by the National Tuberculosis Association in 1941 gave the mortality rate for the country at large as 46 deaths per 100,000 of population, whereas Virginia had a death rate of 49 per 100,000. We had more than 1,600 deaths from tuberculosis in Virginia in 1941, approximately 1,000 of this number dying before reaching the age of forty-five, during the active, productive period of life. There are a great many uncontrolled, active cases in the State for which we have no facilities for the proper care and treatment. In one of our institutions in January, 1943, there were

fifty-seven patients under the age of twenty and eighty-five under twenty-five years of age. During the past three years more than 44 per cent of the patients discharged from this institution were between the ages of fifteen and thirty.

We may take a deep inspiration, swell out our chest, and point with pride to the reduction in the mortality rate from tuberculosis, but the fact remains that in 1941 we had 1,600 deaths in Virginia and 60,000 deaths in the country at large, directly chargeable to tuberculosis. Personally, I fail to get any consolation from these statistics. On the contrary, I think they should arouse us from our state of tolerance, lethargy and complacency and urge us to greater efforts in our search for early cases, not forgetting the fact that every far advanced and chronic case of pulmonary tuberculosis was, at some time in its history, an early case. It should also be remembered that statistics will show that between the ages of fifteen and forty-five, tuberculosis is the most fatal disease we have.

There is a striking parallel between war and tuberculosis up to a certain point. War and tuberculosis both have a destructive objective. Both draw their recruits very largely from the youth of our country and statistics will show that the peak of mortality occurs in corresponding age brackets of life. Here the parallel ends.

I am informed that a recruit or draftee for the armed forces of our country is given one or more complete physical examinations, including a radiographic examination of his chest, and a long period of intensive training before he is considered qualified for active combat duty. Yet, I am creditably informed, physicians in Virginia, many of them without previous experience in treating clinical tuberculosis, are being trained in from six to eight weeks to treat a disease that has killed more people, to say nothing of the thousands invalided for life, than all the wars of our time.

In speaking of treatment I refer particularly to collapse therapy or artificial pneumothorax. From more than twenty years' experience in treating clinical pulmonary tuberculosis I am thoroughly convinced that it requires as much skill, experience and judgment to pilot a patient receiving artificial pneumothorax through a period of from two to five years, or longer, to a successful conclusion, bearing in mind the many changes, accidents and complications that may and frequently do occur during the course of treatment, as is required by any other supplementary method of collapse therapy employed today. The present practice of hospitalizing some of our patients in state institutions for a period of a few months to have an artificial pneumothorax instituted or initiated, and then to send these patients back to their homes scattered over the State where they will be treated over a period of years by men with very limited experience in the treatment of tuberculosis, many of whom have access to neither x-ray nor fluoroscopic equipment, is, in my opinion, a manifest disservice to the patient, approaching dangerously near the border-line of malpractice.

We have in Virginia a very worth-while law requiring all school children to be successfully vaccinated against smallpox before entering any public school in the State. I understand that no death from smallpox has been reported to the state health authorities since 1934. There is no fanfare or beating of drums when the tubercle bacilli marshal their forces for an attack. They go about their work in a quiet way and, when the victim of an attack feels ill enough to consult a physician, the disease, in the majority of cases, has progressed to the moderately advanced or far advanced stage and we have lost the most important factor in the successful treatment of pulmonary tuberculosis, namely, early diagnosis.

For a good many years I have advocated the use of the tuberculin test for the detection of tuberculous infection among our young people. I would like to suggest to the tuberculosis-minded people of Virginia who are interested in the control of pulmonary tuberculosis, especially in our young people, that we take some concerted action in the matter, and my suggestion is that we petition the Legislature of Virginia to enact a law requiring all high school students from fourteen to twenty years of age to have routine tuberculin tests, subsequent studies to be determined by the reactions to the tests. Such a law would not solve the problem of tuberculosis in Virginia but it would, in my opinion, be a constructive approach to a very serious problem involving the health, happiness and life of many of our young people and it would allow us to meet the enemy on the first line of battle before irreparable damage had been done.

I want to say, in conclusion, that I am not un-

mindful of the value of the roentgen ray. The x-ray has, in a large measure, revolutionized the practice of medicine and surgery in the civilized world. I consider the x-ray and fluoroscope indispensable in the intelligent treatment of pulmonary tuberculosis and the most dependable factor we have in demonstrating lung pathology, but not the last word in the diagnosis of pulmonary tuberculosis. Tuberculosis is a very serious matter, as I know from personal experience. Every person charged with having, or suspected of having, pulmonary tuberculosis has a right to his day in court and a speedy determination of his guilt or innocence. Propaganda, the x-ray alone and probability are not the solutions to the problem.

Edwin Court.

Medical Books Urgently Needed in Russia.

Vast public health and rehabilitation problems facing Soviet authorities in the thousands of devastated communities recaptured from the Nazis this year are reflected in an appeal just received by Russian War Relief for more than 200 American textbooks urgently needed in Soviet medical schools and libraries.

Dr. Vladimir V. Lebedenko, noted Soviet neurosurgeon now in the United States on a Red Cross mission, gave the list to Russian War Relief with the plea that the books be collected as quickly as possible to aid in the training of thousands of additional physicians and other personnel needed to handle the enormous post-war job of rehabilitating soldiers and civilians suffering from the terrible impact of this war.

Russian War Relief pointed out that whereas medical textbooks previously requested by Soviet authorities were devoted to problems of military medicine, this new list is much broader in subject matter, ranging from plastic surgery to nutrition. It reflects a growing interest of Soviet health officials in the latest American findings in such fields as the treatment of tuberculosis and pneumonia, dietetics, child psychiatry and play therapy, stomach diseases, war neuroses, occupational therapy, psychology and mental hygiene. A few works on cattle and insect diseases are also needed.

Dr. Lebedenko told Russian War Relief that these textbooks would be particularly useful at this time, since Soviet medical institutions are training two and a half times as many physicians as before the war, at a time when paper and other material shortages have greatly reduced Russia's own publishing activities.

Gifts of textbooks from American physicians and medical associations have played a part in the training of more than 66,000 doctors in the U.S.S.R. since June, 1941, according to Russian War Relief. Many letters have been received from Soviet physicians and students expressing deep gratitude for the books. The writers particularly mention their pleasure at receiving messages from the donors. Included in a long list of books desired are two by Virginia doctors—A Handbook of Allergy for Students and Practitioners by Wyndham B. Blanton, M.D., and The Diagnosis and Treatment of Diseases of the Esophagus by Porter P. Vinson, M.D.

Dr. Lebedenko's medical booklist is available upon request from Russian War Relief, 11 East 35th Street, New York 16, N. Y. Books donated should be sent to the above address.

Penicillin for Civilian Use.

A forecast that "under the powerful impetus of government agencies" there should be sufficient penicillin produced to more nearly provide for civilian as well as military needs within the next twelve months has been issued by Dr. Theodore G. Klumpp, president of the Winthrop Chemical Company, Inc. Dr. Klumpp is a member of the Penicillin Producers' Advisory Committee that met recently in Washington with the Office of Scientific Research and Development and the WPB. For the immediate present, public health authorities should absorb all possible knowledge on penicillin as a means of "completing the link between producers, the government and the public", he stated.

PLANS FOR A MISSION HOSPITAL CENTER IN KOREA

R. MANTON WILSON, M.D.,
Richmond, Virginia.

Now that a successful conclusion to this war appears much more evident than it did on that fateful seventh of December, I have begun to plan for future aid to the people of Korea, among whom I lived for thirty-three years. When the Japanese drove medical missionaries out of Korea, it was with bitter disappointment that I abandoned a medical program there that included a prospering leper colony of 700 people. The only hope of these unfortunates lay in the hands of the medical missionaries; what is happening to them now, no one knows. During this enforced furlough in America, some of us have been preparing for a brighter future, when we can return and render even better service than before. I believe that the medical profession is, and certainly should be, interested in plans for post-war medical aid to such countries; it is for this reason that the following report is made.

No one unacquainted with Korea can imagine the frightful need for medical care and sanitary measures, as well as education to combat ignorance and superstition. The people are afflicted with leprosy, tuberculosis, malaria, typhus, and diphtheria. Sanitary measures are almost unknown: rats run about the gutters and over food, disseminating typhus and Brill's disease; there is an open toilet in every yard, breeding the flies which swarm over the faces of children and the sick—leaving them spotted with fly specks. In fact, a large part of the time of one of our nurses was taken up in extracting dead flies from the auditory meati of infants. Moreover, the human feces are then spread on the fields, contaminating the green vegetables, many of which are still eaten raw. Thus the natives become veritable ambulatory zoological gardens populated by hookworms and amebae. The fact that the communal spring or well is often down hill from a village, thus permitting surface drainage, does not facilitate attempts to control typhoid fever. Mosquitoes breed freely in tubs of water about the houses. The usual custom of the natives is to use a smudge in the house at night until they fall asleep, and then permit the insects to drink their fill unhindered. The practice of eating raw crab meat is responsible for the common infection with Distomum, the lung flukes, producing chronic hemoptysis.

The native doctors are still far from being capable of handling these manifold problems. Some of these practitioners are merely boys who formerly acted as orderlies in our hospitals, who have been

Figure 1. Korea.

granted licenses to practice. At that, they are far superior to the doctors of the "Old School", who practice acupuncture with filthy needles, and insert mops into the stomach to extract evil spirits. Although we hope to train further our former orderlies,

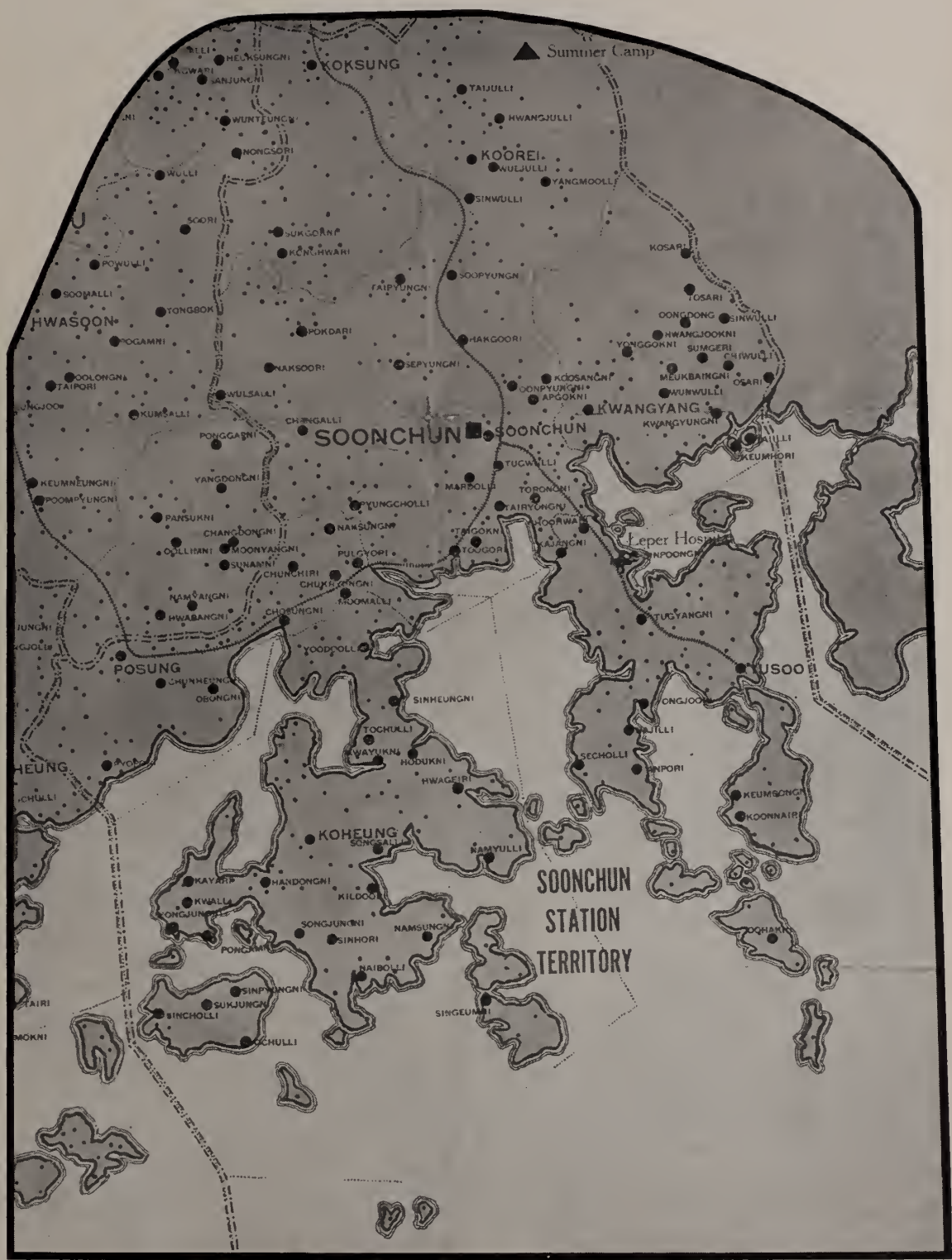


Figure 2. Enlargement of circle in South Korea. Scale—One inch equals 15 miles. Small dots are villages, larger dots churches. Population of this area is 100,000; all Korea 23,000,000.

about all we will be able to do for the others is to continue to extract broken-off mops from the stomachs of their patients.

The Koreans are also badly in need of dental care. Although the teeth of the children are excellent, perhaps due to lack of sweets, the adults require many extractions. On one occasion, another physician and I extracted exactly 999 teeth in four days.

Thus the need for help is evident. Now, what can be done? I, for one, am returning to Korea as soon as possible after the war, and it is with pardonable pride I can state that my five sons are planning to return with me. All were born in Korea; the people and the language are familiar to them. Three of them are graduates in medicine; the fourth soon will be. All of them are now enrolled in the Army. We plan to establish a Medical Center at one of the established Mission Centers in Soonchun, Korea, where our leprosy hospital is, or perhaps was, located, for this area is thickly populated and rife with ignorance and misery. Within a radius of 60 miles there are 100,000 people. Also, the large area of coast line there will make it possible for one of us to spend most of his time visiting these people by boat, as an Oriental version of Doctor Grenfell's Labrador Mission. If Korea does not get her freedom after the war, we plan to go to west China where the needs are even greater.

The staff, to begin with, would be small, to consist of us five physicians, perhaps four evangelists, two nurses, and one business man. Each doctor would specialize in one of these branches: Medicine; Surgery; Obstetrics, Gynecology and Pediatrics; Ear, Eye, Nose and Throat; Public Health. The plant would consist of five hospital units: Men's, Women's, Children's, Tuberculosis and Leprosy. An ambulance will be necessary to bring in some patients, in addition to those brought in by boat.

Our objectives will include:

1. Evangelism through medicine.
2. Care of the sick, especially of tuberculosis and leprosy.
3. Advanced medical and surgical problems.
4. Promotion of public health by education throughout the district.
5. Provision of internships for the native doctors.
6. Training of native nurses who will eventually disseminate their knowledge over the country.

Finally, we plan to turn over this work to the natives, through their churches, as soon as they are able to carry the burden, for in such a country it is only through progressive churches, rather than through backward governments, that progress can be obtained.

Such is our plan; a plan in which we believe so sincerely that my five sons, all young men on the threshold of their careers, are ready and anxious to devote their entire lives to it.

1308 Avondale Avenue.

Amebiasis.

The incidence of amebiasis has been shown to be greater than was formerly supposed, and there is reason to believe that the disease may become even more prevalent when large numbers of troops begin to return home from the tropics. Surveys collected before the war revealed that more than one in ten subjects harbored *E. histolytica.* It would seem reasonable, therefore, that whenever intestinal symptoms form a part of the clinical picture, the diagnosis should not be considered complete until the possibility of amebiasis has been ruled out. Chronic, uncomplicated intestinal amebiasis is the most frequent type, and it includes the carrier as well as the individual with recurrent or mildly persistent symptoms. Pulvules Carbarsone, Lilly, each containing 0.25 Gm., may be given orally at the rate of one pulvule two or three times daily to a total of twenty doses (5 Gm.). This routine may ordinarily be repeated several times, provided intervals of ten days are allowed between courses and the urine and liver show no evidence of damage. Bed rest is not necessary in this group.

SULFAGUANIDINE IN THE TREATMENT OF ACUTE BACILLARY DYSENTERY— A STUDY OF 520 CASES

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Many writers have recently called attention to the fact that sulfaguanidine is quite efficacious in the treatment of bacillary dysentery.[1-7] Attention has also been called to the use of this drug in the treatment of bacillary dysentery carriers.[8-12] During the five week period, ending June 28, 1943, five hundred and twenty cases of acute bacillary dysentery were treated with sulfaguanidine at the 151st Station Hospital, located in Northwest Africa.

I. CLINICAL CHARACTERISTICS OF THE CASES

A. Systemic Symptoms.

All of the cases presented typical symptoms of an acute dysentery, with the passage of from five to fifty daily stools containing blood, pus, and mucus, and exhibited extreme prostration, chills, fever, nausea, vomiting, weakness, tenesmus, anorexia, and dehydration.

1. *Fever.*—Ninety per cent of the cases were febrile on admission (See Table I). Admission temperatures ranging as high as 105.4, and as low as 97.0, were seen. The average temperature was 101.6, while the mean temperature was 102.4.

TABLE I
SYMPTOMS OF THE DISEASE

Fever	(90%).
Abdominal Cramps	(85%).
Chills	(48%).
Nausea and Vomiting	(45%).
Tenesmus	(42%).
Blood in Stool	(33%).
Anorexia	(25%).
Headaches	(12%).
Generalized Aches	(10%).
Dizziness	(10%).
Weakness	(10%).

2. *Abdominal Cramps and Tenesmus.*—Generalized abdominal pain recurring at intervals in the form of cramps was noted in eighty-five per cent of the cases, while tenesmus was complained of by forty-two per cent of the cases.

3. *Chills.*—Forty-eight per cent of the cases experienced one or more true shaking chills prior to admission to the hospital. This high instance of true shaking chill presented many diagnostic problems as, not infrequently, cases of Plasmodium Falciparum malaria present themselves with chills and fever, accompanied by bloody diarrhea.

4. *Nausea and Vomiting.*—Nausea and vomiting were present in forty-five per cent of the cases.

5. *Blood in the stools.*—This condition was noted by thirty-three per cent of the patients. This figure probably should have been higher as many patients were unable to state whether their stools contained blood, pus, or mucus, due to the fact that the majority of the patients were using field latrines where observation of the character of the stools was impossible.

6. *Frequency of the Stools.*—The frequency of bowel movements during the twenty-four hour period preceding hospitalization ran from five to fifty. The average frequency per patient was eight stools for that period of time.

7. *Miscellaneous.*—Among the various symptoms that made themselves known were: anorexia—twenty-five per cent, headache—twelve per cent, general aches and pains—ten per cent, and dizziness and weakness—ten per cent.

II. CLINICAL COURSE

These five hundred and twenty cases of acute bacillary dysentery were among young adults, whose average age was twenty-seven years. Practically all of the cases had been ill a matter of a few hours, while a very few had had symptoms for as long as twenty-four to forty-eight hours prior to admission. The patients were extremely prostrated, toxic, dehydrated, and several were admitted with a history of sudden, and complete, collapse while on duty. One man was found lying in the road, conscious but too weak to get up. Many of the patients were so seriously ill as to dispel any pre-conceived notions of the invariable mildness of bacillary dysentery caused by the Flexner group of organisms.

The response to therapy was very rapid. The

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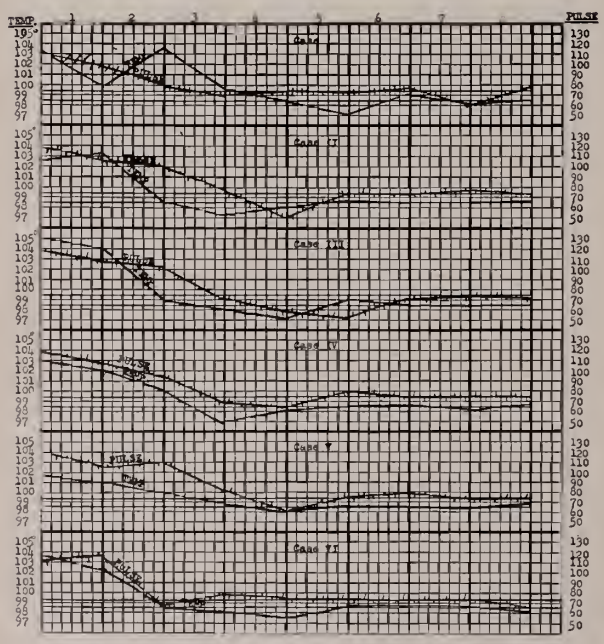
majority of the cases had normal temperatures by the third or the fourth day (See Chart I for six

CHART I

TEMPERATURE AND PULSE CURVES OF SIX REPRESENTATIVE CASES

Days	1	2	3	4	5	6	7	8
Case No. 1								
Temp.	103.	100.	103.4	99.4	98.6	97	98.6	98.8
Pulse	110	100	88	74	74	72	72	72
Case No. 2								
Temp.	102.6	103.2	98.6	97.	98.	98.6	98.6	98.6
Pulse	118	106	72	60	72	72	74	72
Case No. 3								
Temp.	105.	104.	99.	98.	99.	98.6	98.6	98.6
Pulse	120	108	100	70	58	62	72	72
Case No. 4								
Temp.	103.	101.	97.	98	98.	98.6	98.2	98.6
Pulse	118	92	70	66	80	72	72	72
Case No. 5								
Temp.	102.	101.	99.	98.	98.6	98.6	98.6	98.8
Pulse	120	108	110	80	60	72	78	72
Case No. 6								
Temp.	103.8	102.	98.6	98.	97.2	98.8	98.6	98.6
Pulse	110	118	72	78	72	72	74	72

CHART I
Temperature and pulse curves of six representative cases.



representative cases). The second day the stools became semi-soft and showed less blood, pus, and mucus. By the third or the fourth day the stools were becoming formed, and the blood, pus, and mucus had disappeared. By that time bowel movements averaged but one or two a day.

Sigmoidoscopic examinations were performed on patients failing to improve after a ten day course of therapy.

III. ETIOLOGY

Inasmuch as there had been a hundred and fifty hospital admissions a few weeks previously due to atabrine sensitivity, with symptoms closely resembling the dysentery cases in that they too had loose stools, vomiting, cramps, and tenesmus, it was thought of interest to determine what proportion of the dysentery cases had noted previous sensitivity to atrabrine. Only nineteen per cent stated that they had had previous intestinal upset upon taking atabrine.

Many of the army encampments were in close proximity to unsanitary native dwellings. There was a distinct possibility that the outbreak of the dysentery was caused by the ingestion of food or drink from native establishments in these unsanitary surroundings.

A. Food and Water.—Extensive investigation of food and water in the army messes failed to reveal them as possible sources of the outbreak. Only twenty-four per cent of the patients admitted having ingested food from other than the usual army sources.

B. Flies.—The large increase in the number of flies was noted coincident with the outbreak of the disease. Many colonies of Shigella Paradysenteriae were grown from the footprints of flies caught in army messes, living quarters, and latrines.

C. Civilian Carriers.—It is well known that a large percentage of the native population are chronic carriers of the bacillary dysentery. In doing routine stool cultures on fifty-four civilians employed in this hospital, it was noted that eight per cent of these civilians had Shigella Paradysenteriae bacilli in their stools, even though they were asymptomatic at the time the culture was made.

D. Length of Stay in North Africa.—Manson-Bahr[12] calls attention to the fact that outbreaks of dysentery are frequently seen in recent arrivals to Africa. British medical officers have frequently called attention to the fact that soon after their troops disembark in this theatre, epidemics of diarrhea break out. The name given to these outbreaks was "Gyppy Tummy" (or Egyptian stomach). Fifty

per cent of the patients in this series had been in Africa less than four weeks.

IV. Treatment

A. Bed Rest.—All patients, upon admission, were placed at strict bed rest in special isolated wards where enteric precautions were followed.

B. Diet.—Liquids—3000 cc. to 3500 cc.—consisted of bouillon, soups with added salt, tea, fruit juices, chocolate milk, as well as liquid gruel and gelatins. Within the first twenty-four to forty-eight hours, the patients were usually able to retain a soft diet. When the patients' temperatures reached normal a regular diet was given.

C. Drugs.—All patients were begun on a routine ten day course of sulfaguanidine immediately after the initial admission stool was obtained for culture. We found it impracticable to weigh our patients, and therefore did not follow the recommended dosage based on body weight, but gave all cases a standard dosage as follows: an initial dose of seven grams was followed by three and a half grams every four hours for the first forty-eight hours. After that, three and a half grams were given every eight hours, to complete a ten day course averaging a total dosage of one hundred and thirty grams.

Bismuth, grams 1.0, and paregoric, 4 cc., were given every eight hours as necessary, for the relief of severe abdominal griping and tenesmus.

Fourteen cases which failed to respond to the initial ten day course of sulfaguanidine, as evidenced by persistent positive stool cultures or continued frequent loose stools, were given a five day course of sulfadiazine as follows: two grams *stat.*, and then one gram every four hours day and night for two days; and then one gram every eight hours for the remaining three days—making a total dosage of twenty-three grams for the five day period.

D. Intravenous Infusions.—The markedly dehydrated patients, and those who could not retain fluids by mouth, were given 1000 cc. of glucose in normal saline every eight hours. No plasma or whole blood transfusions were given.

V. Laboratory Data

All patients had an admission stool culture. If the initial stool culture was negative, the patient was released from the hospital at the end of his ten day course of sulfaguanidine. If the patient's admission stool culture was positive, three consecutive negative stool cultures were required before he was released from the hospital. Five days were allowed to elapse after the completion of the sulfaguanidine therapy before beginning to collect the three stool specimens on successive mornings.

A red blood count, a white blood count, a differential count, and a urinalysis were done on each patient upon admission. Average values are shown as follows:

1. Average red blood cell count	4,500,000
2. Average white blood cell count	7,100
3. Highest white blood cell count	15,450
4. Lowest white blood cell count	2,500
5. Average differential: Polys.	64%
Lymphs	36%

VI. Bacteriology

Due to the limited supplies, and the field conditions, under which this work was done, the bacteriological procedures were necessarily simplified. All the stools were emulsified with equal parts of physiological saline and streaked out on a selected medium of desoxycholate citrate agar, or S. S. agar. Clear colorless colonies were fished to Russell's double sugar, or Kliegel's iron slants. Those that showed typical reactions were studied morphologically and biochemically with sugars, and agglutinated against known anti-sera. At the present time the nomenclature of the dysentery group may be slightly confusing. The organisms that were formerly known as Strong variety, Hiss-Y, or Russell variety, are now included in this group. In fact, at the present time, thirteen—possibly fifteen—different types of Flexner bacilli can be recognized.

There were two hundred and eight patients with positive stool cultures. Table II shows the results

Table II

Total number of cases		520
Total number of positive cases		208 (40%)
a. Positive Shigella Paradysenteriae	190 (91.4%)	
b. Positive Shigella Sonne	18 (8.6%)	
Number of cases with a single negative admission stool		196 (37.7%)
Number of cases positive after initial course of therapy		14 (2.7%)
Number of cases with positive stools after second course of therapy		0

of these stool cultures. There were one hundred and ninety positive Shigella Paradysenteriae, and eighteen Shigella Sonne. Only 2.8 per cent (14 cases) required a second course of sulfonamide (sulfadiazine was used) in order to render their

stools negative. These fourteen cases were all Shigella Paradysenteriae.

Unfortunately, the cases in this series could not be observed for any length of time, but were discharged within a few days after the course of sulfaguanidine was completed and negative stools were noted. In the cases of the patients with an initial negative stool, they were only observed during their ten day course of therapy, while the other patients with positive stools were followed for a period of approximately twenty days.

negative stool culture represented the only culture taken of that particular patient. Reference to Chart II reveals numerous instances in which positive cultures were obtained after a negative report had been received on the previous stool culture (See cases 5, 11-15, 17, and 21). Had a series of six to twelve stool cultures been possible on each patient, the incidence of positive stool cultures would probably have been higher than the forty per cent of positive cases noted.

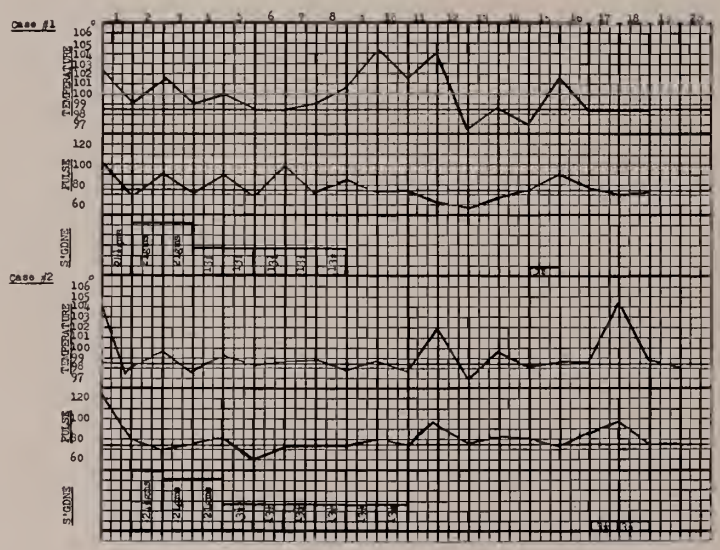
2. Although still a debatable point, it is possible

CHART II

TWO CASES OF DRUG FEVER FOLLOWING SULFAGUANIDINE

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19
Case No. 1																			
Temp.	102.2	99	101.4	100	98.6	98.6	100	100.6	104	102.2	104	96.8	98.6	101.4	98.6	98.6	98.4	98.6	
Pulse	100	70	90	70	98	72	76	76	72	72	76	72	74	90	74	74	72	72	
S'gde gm.	21½	21½	21½	21½	21½	21½	21½							21½					
Case No. 2																			
Temp.	104	97.6	99.6	97.	98.6	98	98.6	97.	99.	98.6	102	96.	99.2	98.6	98.6	104.2	99.	98.4	
Pulse	122	80	70	72	80	60	70	80	76	72	98	72	80	74	72	100	98.8	72	
S'gde gm.	21½	21½	21½	21½	21½	21½	21½	21½	21½						3½	3½			

CHART II
Two cases of drug fever following sulfaguanidine.



It is felt that, while there were only two hundred and eight positive cases of bacillary dysentery as proved by the stool cultures, it is highly probable that a good many more of the cases had true bacillary dysentery. The reasons for this assumption are two-fold:

1. In many cases the initial single admission

that the percentage of positive cultures would have been higher if nicotinamide or nicotinic acid had been used in the culture media as suggested by Koser.[16] The observations of Koser and his associates are very interesting. They found that many Flexner and Sonne bacilli either failed to grow, or grew only poorly, in a basic medium consisting of

fifteen amino acids, glucose, and inorganic salts. Addition of nicotinamide or nicotinic acid exerted a marked growth-promoting effect. These substances may, therefore, be considered essential growth factors for these strains.

VII. Control Cases

For the purposes of closer clinical and laboratory study, twenty-one cases were set aside and treated as follows: all of the patients had temperatures recorded three times daily, the number of stools recorded daily, a daily stool culture, and agglutination titers *versus* Shigella Paradysenteriae on the seventh and fourteenth days after the onset of the disease.

The group of twenty-one patients were divided into two groups of ten and eleven patients. The group of ten patients received sulfaguanidine, while the second group of eleven patients did not receive the drug. Both groups received bismuth, paregoric, and tincture of belladonna, as necessary. In addition to the above orders, the following special studies were made:

a. Patients receiving sulfaguanidine:

1. Complete blood count and urinalysis every two days while receiving the drug.

2. Blood sulfaguanidine levels on the third, sixth, ninth, and twelfth days, after the drug had been started.

3. Total sulfaguanidine urinary excretions in the daily twenty-four hour urine output.

b. Patients not receiving sulfaguanidine:

1. Complete blood count and urinalysis on admission and on the tenth hospital day.

Points which it was hoped that this control group would throw light on included the following:

a. The efficiency of sulfaguanidine in ridding the gastro-intestinal tract of the dysentery bacillus.

b. The efficiency of sulfaguanidine in controlling the symptoms of diarrhea, vomiting, fever, chills, etc.

c. Any toxic effects of sulfaguanidine on the blood, the kidneys, the neurological system, etc.

d. Whether positive stool culture reports, when dealing with Flexner bacillus, constant or the equivocal, as pointed out by Rantz and Kirby[8] and Opper and Hale.[10]

e. Blood sulfaguanidine levels from large doses such as were used in these cases.

f. Total excretions of sulfaguanidine in the twenty-four hour urine samples.

In the treated control group it would have been of interest if these patients could have been followed for a period of one to three months, obtaining daily stool cultures to determine if, or when, any cases might become positive following the course of sulfaguanidine. However, Opper and Hale,[10] in a small series of thirty-three cases, found that twenty-nine remained negative for the dysentery bacillus over an average period of one hundred and five days, followed by a seven day treatment of twenty-eight grams of sulfaguanidine. The four cases that subsequently became positive after the original course, were rendered negative by a second course of twenty-eight grams. In the Opper and Hale series, this represents an incidence of twelve per cent requiring a second course of sulfaguanidine. Anderson and Cruikshank,[4] in using sixty-two grams of the drug, felt that even larger doses might be used with good effect. The low percentage of cases (2.8 per cent) requiring a second course of therapy in our series of five hundred and twenty cases would certainly speak in favor of larger doses (130 grams).

VIII. Results

A. The Efficiency of Sulfaguanidine in Controlling the Symptoms of Bacillary Dysentery.—There was a very rapid response to therapy. The majority of the cases had normal temperatures and pulse rates by the third or the fourth day (See Chart I for six illustrative cases). On the second day the stools became semi-soft and the diminution of blood, pus, and mucus was very marked. Third or fourth day stools were usually well formed and the blood, pus, and mucus had disappeared.

B. Toxic Effects of Sulfaguanidine.—Three cases developed drug fever which subsided as soon as the drug was withdrawn. To prove the etiology of this fever, the drug was again given and hyperpyrexia developed (See Chart III). There were no anemias, leucopenias, or other toxic effects in the blood. Anderson and Cruikshank[4] reported no toxic effects in their series of forty-one adult Flexner bacillary cases treated with sulfaguanidine. In spite of the finding of sulfaguanidine crystals—sometimes in very large amounts—in the urine of all patients receiving sulfaguanidine, there were no renal complications in this series. Examinations of hundreds of urine specimens failed to reveal any evidence of renal irritation as evidenced by albuminuria or hematuria.

Barnes[17] calls attention to the fact that alkalinity and temperature affect the solubility of sulfadiazine and sulfathiazole in the urine, and has conclusively proven that the urine should be rendered alkaline in all patients receiving sulfadiazine and sulfathiazole. DeCandole[11] is the only paper that this author has seen that refers to the use of soda bicarbonate with each dose of sulfaguanidine. DeCandole doesn't give the reasons why soda bicarbonate was administered with the sulfaguanidine. No attempt was made in these cases to alkalinize the urine, and no complications were seen. No skin rashes or neurological effects were noted.

C. Stool Culture.—Rantz and Kirby[8] and Opper and Hale[10] emphasize the fact that the presence of Shigella Paradysenteriae in carriers has a tendency to be intermittent—the organisms being excreted for one or two days, and then not again for weeks or more. The usual criteria of a few successive negative stools following the termination of the acute illness can not be accepted as a guarantee against the reappearance of the organism. In the Opper and Hale series, four out of the thirty-three cases taking the drug underwent a recrudescense of their infectivity, indicating that caution must be exercised in deciding when the carrier state is definitely over. Reference to Chart II will substantiate the fact that in both sulfaguanidine treated and non-sulfaguanidine treated cases, positive and negative stools may be found in the same patient at different times. The urgency of the situation requiring that these patients rejoin their units at the earliest possible moment so that many of them might take their responsible positions among the key units engaged in making the invasion of the continent prevented observation over a long period of time to ascertain if any of these cases would subsequently become carriers. There is no doubt in our mind but that three negative stool cultures required for discharge from the hospital are too few. Just how many would be considered the proper number is still questionable. It is probable that troop movements in an active theatre of war would prevent observations as long as the period of a hundred and five days as in the Opper and Hale series, but certainly a happy medium of about fifteen consecutive stools might be aimed at, rather

CHART III

STOOL CULTURES OF CONTROL GROUP

P=Positive stool
N=Negative stool.

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
TREATED CASES																												
Case No. 1												P	N	N	N	N	N	N	N	N	N	N	N	N				
Case No. 2										N	N	N	N	N	N	N	N	N	N	N	N	N	N					
Case No. 3					P			P	P	N	N	N	N	N	N	N	N	N	N	N								
Case No. 4					P				P	N	N	N	N	N	N	N	N	N	N	N								
Case No. 5											N	P	P	N	N	P	N	N	N	N	N	N	N					
Case No. 6													P	N	N	N	N	N	N	N	N	N						
Case No. 7										P	P	P	N	N	N	N	N	N	N	N	N							
Case No. 8					P			P	P	N	N	N	N	N	N	N	N	N	N									
Case No. 9								N	N	N	N	N	N	N	N	N	N	N	N									
Case No. 10						N	N	N	N	N	N	N	N	N	N	N												
UNTREATED CASES																												
Case No. 11										N	N	P	P	P	N	P	N	N	N	N	N	N	P					
Case No. 12											N	P	N	N	N	N	P	P	N	N	N	N	N	N	N	N		
Case No. 13								P	N	N	P	P	N	N	N	N	N	N	N	N	N	N	N	N	N	N		
Case No. 14													N	P	N	P	P	N	N	N	N	N	N	P	N	N		
Case No. 15					N	N	N	N	N	N	N	P	N	N	N	N	N	N										
Case No. 16					N	N	N	N	N	N	N	N	N	N	N	N	N	N										
Case No. 17											N	N	N	N	N	P	N	N	N	N	N	N	P	N	P			
Case No. 18										N	N	N	N	N	N	N	N	N	N	N								
Case No. 19							P	P	N	N	N	N	N	N	N	N	N	N	N	P								
Case No. 20											N	N	N	N	N	N	N	N	N	N	N							
Case No. 21												N	N	P	P	P	P	N	N	N	N	N						

TABLE III
BLOOD SULFAGUANIDINE LEVELS
(to 100 cc. of blood)

Days	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23
Case 1															3.0			3.0			3.0		
Case 2											1.1			2.0			1.8						
Case 3													.709			.932			1.6				
Case 4										1.2			1.5			1.3							
Case 5													.10			1.5			1.5				
Case 6													1.9			1.5			1.6				
Case 7												2.0			2.1			2.0					
Case 8						2.9			1.7			.922											
Case 9			2.5			2.3			2.6														
Case 10									2.3			1.5			2.3								
Case 11			3.2			4.8			3.5														

than the three which is at present the requirement for discharge from the hospital.

D. Blood Sulfaguanidine Levels.—Smyth[19] reported blood concentrations as high as 16.0 mgm. per cent in his series of aged patients, while Lucchesi and Gildersleeve[20] found blood levels in children as high as 9.5 mgm. per cent. Table III shows that the highest blood concentration level reached in this series in young adults was 4.8 mgm. per cent.

E. Excretion of Sulfaguanidine in 24 Hour Urinary Specimens.—Table IV contains the figures showing the excretion of sulfaguanidine in the

TABLE IV
SULFAGUANIDINE CONTENT OF 24-HOUR URINARY SAMPLES
Top figure=volume of urine in cc. Lower figure= amount of drug in grams excreted.

June	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26
Case No. 1									1100	490	990	920	970	390	1100	800	575	815	900			
									1.034	.942	1.584	1.134	1.465	.181	.619	.085	.122	.057	.015			
Case No. 2							470	760	960	1180	1250	810	720	830	820	910						
							.376	.844	1.099	.959	1.152	.811	.373	.186	.079	0.0						
Case No. 3								1230	1090	625	930	718	890	820	820	870	260					
								1.111	1.090	1.250	1.099	2.051	.021	1.223	1.131	.063	.111					
Case No. 4							495	750	590				375	880	850	550						
							1.010	1.531	.541				.021	.921	.654	.023						
Case No. 5								545	640	720	360	1020	910	890	890	780	525					
								.316	.954	1.142	.750	1.172	1.138	.374	.050	.054	.042					
Case No. 6										335	1100	1185	1090	950	840	930	725					
										.195	2.245	1.823	.959	.950	.071	.182	.187					
Case No. 7						630		1130	1160	650	1005	965	780	1060	980	810						
						.724		.807	.618	1.512	.718	1.245	.530	1.093	.070	.104						
Case No. 8				1250	1120		1810	950	1820	750	1190											
				2.063	2.433		3.448	.704	.442	2.500	1.117											
Case No. 9										900												
										1.168												
Case No. 10						1080	710	820	800	525	900	690	1030	890	340							
						1.688	1.145	.975	.914	.991	1.168	.550	.069	.368	.063							

twenty-four hour urinary samples. The highest values reached in this series was 2.5 grams.

IX. Discussion

In any large group of sulfonamide treated cases complications of one sort or another are common. This varies with several factors, among them being the sulfonamide used, dosage, blood level, amount excreted by way of the urinary tract, reaction of the urine, individual sensitivity, and the length of time that the sulfonamide is administered. The very low instance of complications seen in this series of five hundred and twenty cases would seem to indicate that sulfaguanidine should be the choice in bacillary dysentery, as sulfathiazole and sulfadiazine are definitely more toxic. In the fourteen previously mentioned cases which did not respond to the original course of sulfaguanidine, a course of sulfadiazine was used with good results. We feel that by using sulfaguanidine in place of a second course of sulfadiazine, equally good results could have been obtained. Opper and Hale,[10] as well as Cornell and his associates[21] found that a second course of sulfaguanidine was effective in the few cases where the first course failed.

Dowling and Lepper[18] found the incidence of toxic reactions with sulfapyridine, sulfathiazole, and sulfadiazine to be 29.4 per cent, 11.8 per cent, and 7.7 per cent, respectively, while Long[22] found the toxic reactions to the above named drugs to be 15.9 per cent, 18.6 per cent, and 6.5 per cent, respectively. The fact that toxic reactions (drug fever) occurred in only 0.6 per cent (3 cases) would indicate that sulfaguanidine is the drug of choice in the treatment of bacillary dysentery caused by Shigella Paradysenteriae and Shigella Sonne. It is possible that the low toxicity in this series is due to low blood levels (the highest was 4.8 mgm. per cent) as Dowling and Lepper found the incidence of renal calculi was *nil* at blood levels of 1.0-4.0 mgm. per cent, but rose to 3.4 per cent when blood levels reached 10.0 mgm. per cent, using sulfapyridine, sulfathiazole, and sulfadiazine.

The three cases of drug fever caused by the administering of the sulfaguanidine were the first that the author has seen. As far as is known, there is no reference in the literature to date on this complication.

X. Conclusions

A. Five hundred and twenty cases of acute bacillary dysentery were treated with sulfaguanidine during a five week period ending 28 June 1943 in Northwest Africa.

B. There were no deaths or serious complications. Three cases of drug fever responded to withdrawal of the drug. No urinary complications were seen, although numerous sulfaguanidine crystals were observed in urine specimens of all of the patients taking the drug. Close observation of the blood revealed no anemias, or leucopenias. More than ninety-one per cent (190 cases) of the positive cases were Shigella Paradysenteriae, while not quite eight per cent (18 cases) of the positive cases were Shigella Sonne.

C. Sulfaguanidine blood levels as high as 4.8 mgm. per cent were observed.

D. Sulfaguanidine urinary excretions in twenty-four specimens reached as high as 2.5 grams.

E. 2.9 per cent (14 cases) of the cases remaining positive after the sulfaguanidine therapy were rendered negative by a five day course of sulfadiazine.

F. Shigella Paradysenteriae bacilli appear intermittently in the stools of both the treated and the untreated patients.

G. Three negative stool cultures were inadequate as proof of the non-infectivity of the patient.

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The Medical and Surgical Relief Committee of America

Has donated to the War Shipping Administration 4,000 capsules of sedatives requested for use in recuperation centers in England and North Africa, according to Dr. Joseph P. Hoguet, medical director of the Committee.

Many American merchant seamen resting in War Shipping Administration convalescence posts abroad have manned ships loaded with explosives, many more have traveled through sub-infested waters, and others are survivors of torpedoed merchant vessels. Tense from the memory of grim ocean-crossings, from the shock of combat or shipwreck, these men cannot sleep, and some become so restless and upset, they are unable to calm down during the daytime. Doses of mild sedatives, such as those contributed by the Committee, relax strained nerves and ensure a normal night's rest.

This recent gift of the Medical and Surgical Relief Committee is but a small part of the $2,500 total of medical equipment requested by the War Shipping Administration's Medical Division in New York. To War Shipping Administration representatives serving in various foreign ports, the Committee has donated 16 large emergency medical field sets, at a cost of $140 each. Specially designed by the Committee's medical board, the field set consists of 2 valise-sized cases, for use by doctors for wounded and ill merchant seamen. Its drugs, antiseptics, bandages, sutures, syringes and minor surgery instrument roll equip it for any emergency, Dr. Hoguet pointed out.

Medical supplies in a strategic port are often scarce, yet merchant seamen landing there, either as injured or sick crew members or as shipwreck survivors, need on-the-spot treatment. This emergency care is what the Committee's set provides. Carefully packed for immediate use, the sets are portable, and can be carried directly to where the casualties are.

Conducted for over 3 years, the Medical and Surgical Relief Committee is dedicated to supplying medical and surgical aid to the armed and civilian forces of the United Nations. To date, over $572,000 of drugs, instruments, serums, vitamins and other equipment have been distributed to maritime and military units of America and her Allies, to needy hospitals, war-zone welfare agencies and to civilian defense posts throughout the free world.

NOTE ON THE TREATMENT OF PULMONARY TUBERCULOSIS BY THE ADMINISTRATION OF HYDROCHLORIC ACID

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In 1923 while carrying out certain experiments in the physiology of the stomach, I administered dilute hydrochloric acid in varying doses to some 50 or 60 subjects. In my practice I also gave hydrochloric acid to patients with achlorhydria. Some of these normal subjects and patients volunteered the information that the acid increased appetite and gave a sense of well-being. In 1926 I began using dilute hydrochloric acid in one dram doses to private and hospital patients who complained of anorexia, underweight, or of being "below par". In about 70 per cent improvement, often considerable, resulted.

a group of subjects with pulmonory tuberculosis. A similar group of tuberculous subjects acted as controls. Each group was originally composed of six male and six female adults. One male dropped out after three weeks for reasons now unknown. All subjects were weighed without clothes at intervals of one week. The acid was diluted in a glass of water, to which sugar and orange juice were added to taste, and sipped through a straw or tube with meals. There were no objections from the patients.

Results. At the end of 72 days the weight gains of the various groups were as follows:

TABLE I

Showing the weights at 11 weekly intervals of two groups of tuberculous patients, (a) treated with hydrochloric acid with meals (b) controls.

(a) *Groups treated with Hydrochloric acid*

	Males Weeks												Females Weeks										
	1	2	3	4	5	6	7	8	9	10	11		1	2	3	4	5	6	7	8	9	10	11
A	143	142	142	144	143	143	141	140	140	140	139	F	114	114	113	112	112	113	111	113	115	114	114
B	130	126	127	128	128	127	127	128	129	129	129	G	104	104	106	104	105	106	108	106	107	107	106
C	116	120	121	121	120	122	121	119	118	121	121	H	78	78	80	81	83	83	84	85	85	86	86
D	131	129	131	130	131	132	135	135	136	136	135	I	106	106	109	110	108	110	110	112	113	114	116
E	110	110	111	112	106	109	110	110	110	109	109	J	102	101	101	102	101	101	101	101	102	101	100
												K	99	100	101	101	101	101	103	103	105	105	107
	632										634		605										631

(b) *Control groups*

L	167	166	166	166	168	169	169	169	164	169	170	R	102	101	104	101	101	102	102	103	102	103	102
M	116	115	117	116	116	118	117	118	119	119	119	S	98	100	100	101	100	102	101	101	101	104	101
N	138	137	139	140	142	143	144	147	148	147	147	T	112	112	113	112	112	112	112	115	114	113	114
O	141	142	143	144	145	145	143	145	145	146	146	U	112	112	112	110	110	111	109	111	113	113	112
P	116	114	114	115	115	116	115	116	115	115	115	V	118	118	117	117	117	117	116	116	118	119	117
Q	136	139	138	137	137	140	138	139	137	138	140	W	91	92	90	90	95	92	91	92	92	92	93
	817										839		634										640

For economy of space, all fractions of a pound have been omitted. They were, however, included in the totals.

So much impressed was I with these results that I suggested to the medical superintendent of a nearby tuberculosis sanatorium that it might be worth while to try a similar course of treatment to his patients, with the object of improving appetite and weight.

Table I shows the results of administering Acidum Hydrochloricum Dilutum, in one dram doses with meals three times a day over a period of 72 days to

(a) Males

5 "experimentals" gained an average of 0.40 lbs.

6 controls gained an average of 3.62 lbs.

(b) Females

6 "experimentals" gained an average of 4.30 lbs.

6 controls gained an average of 1.10 lbs.

(c) Totals

11 "experimentals" gained an average of 2.52 lbs.
12 controls gained an average of 2.35 lbs.

Conclusion. In spite of the fact that the administration of dilute hydrochloric acid with meals appears to increase appetite and well-being, this treatment did not have any appreciable effect on the weight of a group of tuberculous patients during a ten-week period of observation.

The Mead Johnson Vitamin B Complex Award.

Nominations are solicited for the 1944 award of $1,000 established by Mead Johnson and Company to promote researches dealing with the B complex vitamins. The recipient of this award will be chosen by a committee of judges of the American Institute of Nutrition. The award will be given to the laboratory (nonclinical) or clinical research worker in the United States or Canada who, in the opinion of the judges, has published during the previous calendar year January 1 to December 31 the most meritorious scientific report dealing with the field of the B complex vitamins. While the award will be given primarily for publication of specific papers, the judges are given considerable latitude in the exercise of their function. If in their judgment circumstances and justice so dictate, it may be recommended that the prize be divided between two or more persons. It may also be recommended that the award be made to a worker for valuable contributions over an extended period but not necessarily representative of a given year. Membership in the American Institute of Nutrition is not a requisite of eligibility for the award.

To be considered by the committee of judges, nominations for this award for work published in 1943 must be received by the secretary, Arthur H. Smith, Ph.D., Wayne University College of Medicine, Detroit, by January 10, 1944. The nominations should be accompanied by such data relative to the nominee and his research as will facilitate the task of the committee of judges in its consideration of the nomination.

Development of Blood Serum Treatments Being Studied by Duke Professors.

Efforts to render blood of animals suitable for human transfusions are being made by Professors Frank W. Putnam and Hans Neurath, of Duke University, Durham, N. C.

In a paper read to the American Chemical Society recently, it was pointed out that protein molecules have a coiled structure which can be loosened or tightened by suitable manipulation with certain organic substances such as urea to modify their chemical nature and hence their disease-curing effects.

It has been discovered by Drs. Neurath and Putnam, in experiments on animals, that various proteins, including blood serums, lose their shock-causing properties after such treatment.

Investigation has shown that synthetic soaps are most effective in modifying the chemical nature of these proteins. Experiments are under way to learn whether they may serve as a means of treating blood proteins to avoid the serum-sickness that is always a risk in immunizing sensitive persons against certain diseases.

These experiments, conducted in laboratories at Duke, are part of the more general problem of investigating factors which cause proteins to produce anti-bodies when injected into human beings for therapeutic purposes.

New Aluminum Hydroxide Gel Preparation.

The value of orally administered aluminum hydroxide gel in promoting healing, relieving pain and controlling pain of gastric and duodenal ulcer, and in controlling gastric hyperacidity, is now well recognized. Its inclusion in New and Nonofficial Remedies and its admission to U.S.P. XII prompted the Squibb Laboratories to offer the preparation under the official name and, of course, in conformity with official specifications and standards.

As offered by E. R. Squibb & Sons, Aluminum Hydroxide Gel is pharmaceutically an elegant preparation of a fluid consistency.

RECENT ACTIVITIES REGARDING COMPULSORY HEALTH INSURANCE

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Since March 1, 1943, three events of particular significance to the medical profession have occurred. In the order of their appearance, these are (1) The National Resources Planning Board Report (March 10, 1943), (2) the provision of funds for "medical, nursing, and hospital maternity and infant care" for wives and infants of enlisted men (March 18, 1943), and (3) The Wagner-Murray-Dingell Bill extending and amending the Social Security Act (June 3, 1943).

An analysis of these recent political activities will again emphasize, in the trend of political thinking, the ever-increasing tempo in agitation for a compulsory health insurance program.

While the sources of these events are rather widely separated agencies in view of their function and operation, the reports and proposals fall logically and naturally into an evolving pattern of social legislation. Just as the "National Health Bill" (1939), and subsequent proposals, were preceded by the reports of the "Technical Committee on Medical Care",[1] so the Wagner-Murray-Dingell Bill follows the National Resources Planning Board Report in time and pattern. The contribution that the expansion of the services provided by the "Children's Bureau" of the Department of Labor makes to the over-all pattern is clearly evident.

THE NATIONAL RESOURCES PLANNING BOARD REPORT

This document, variously known as the "Delano" or the "American Beveridge" Report,[2] concerns itself with a contemplated revision of the social and economic patterns of the country.

Among other things, it makes a general recommendation that the Federal government take immediate steps to foster the development of an adequate plan of medical care. Predicated on the hypothesis that "the health of the individual is the concern not only of the individual himself but of society as a whole", the report recommends that the government, in cooperation with the medical profession, take steps to develop "plans which enable the patient to budget expenses over a reasonable period and to contribute toward the costs of care according to his ability, and which at the same time assure to medical personnel a decent livelihood commensurate with the high costs of their professional training".

In this respect, it suggests a more radical and far-reaching step toward the complete socialization of health agencies than the Social Security Board which in its "Seventh Annual Report—1942" states:

> "The serious aspect of medical costs lies not in the average among the population as a whole but in the unpredictable and heavy burdens of families in which there is a major illness during a year. Provisions of benefits to offset the burden of hospital bills on insured workers and their families would be of substantial help in lightening the problem of high cost illness. The Board is of the opinion that the risks of hospital cost is one to which the approach of social insurance is particularly appropriate".[3]

Concerning the provision of medical care, the N.R.P.B. report suggests the exploration of "new methods of providing medical care and devices for making economical and effective use of such facilities and personnel as are available". In order to accomplish this purpose, the steps suggested are (1) the better coordination of facilities and agencies in medical and health care to preserve the health of the people, (2) an increased use of clinics, health centers and group practice so that care may reflect the developments and knowledge of medical science, and (3) more effective utilization of the doctor's training and skill so that he may devote his attention to ways and means of improving medical care.[4] It was also suggested that the provision of essential medical care include "promoting the health of mothers and children".

In presenting a broad pattern of medical practice deficiencies, the report failed, however, to make any specific administrative or functional recommendations. Hirschfield, in commenting upon this report, states "it advances broad proposals but fails to hammer them into statistical form".[5]

There are two general criticisms concerning the development of the program suggested. One of the criticisms questions the "ability of the national economy to absorb the enormous cost" which, it is estimated, will probably run into $15,000,000,000 a year for the entire program. Incidentally, the estimated cost of the health services included, based upon

the Beveridge figures and transposed into comparable figures for the United States, is $3,365,000,000 per year.[6]

The second criticism suggests that in such a program there "is the stifling of incentive on the part of the worker, who, assured of his security has no interest to struggle and strive for his own security and success".[7]

There is some question as to the actual validity of these criticisms of excessive costs and stifled incentive. The "Medical Planning Research" in the "Interim General Report" (which is a "report on a proposed reorganization of medical practice in Great Britain" compiled from the opinions and viewpoints of some 400 British physicians) contains the following statements which may be cited as answers to these objections:

> "It must be continually remembered that finances should no longer be regarded as a limiting factor. If the physical means to supply these services are available, cost is no longer an excuse for delay".[8]
>
> "We recognize that such comprehensive proposals carry with them a theoretical risk of excessive pampering and paternalism. . . . We regard the theoretical risks involved in social security as well worth running".[9]

While it is undoubtedly true that conditions in England are quite different from the situation in this country, there are competent authorities here who support the viewpoint outlined in the N.R.P.B. report which states that "we have now passed the stage when 'financing the program' need be more than a technical problem".[10] Although this report is considered by many as too revolutionary and visionary to be feasible and practicable, and Congress seems little disposed to react favorably to its proposals, it parallels to a remarkable degree the programs contemplated in England and Canada, which seem to have a better than even show of being adopted.

EMERGENCY MATERNITY AND CHILD CARE FUNDS

On March 18, Congress approved an appropriation of $1,200,000, for the purpose of making grants to the various states for emergency maternity and child care, for the period ending June 30, 1943.

The background of this proposal is extremely interesting. Approximately twenty years ago, Congress, cognizant of the "high infant and maternal death rate in rural areas", enacted the Sheppard-Towner Act (1921).[11] The provisions of this bill which were administered by the Department of Labor, provided grants to states for "maternal and child health" programs.

The appropriations for this act continued until 1929, when Congress provided no funds for its continuance, due in large measure probably, to the attitude of the American Medical Association. A resolution of the House of Delegates of the A.M.A. presented at the "Hearings before the House Committee on Interstate and Foreign Commerce" reads as follows:

> "Resolved that the House of Delegates condemns as unsound in policy, wasteful and extravagant, unproductive of results and tending to promote communism, the federal subsidy system established by the Sheppard-Towner Maternity and Infancy Act and protests against a renewal of that system in any form".[12]

Six years later, however, this opposition of the A.M.A. was ignored, and the Social Security Act re-established the maternity and child health provisions of the Sheppard-Towner Bill. Under Title V—"Grants to States for Maternal and Child Welfare", an appropriation was made "for the purpose of enabling each state to extend and improve . . . services for promoting the health of mothers and children".[13]

The amount available under this act was used in making payments to states that submitted approved plans for such services. Here, again, the provisions of the bill were administered by the "Children's Bureau" of the Department of Labor.

Some idea of the general acceptability of the program may be obtained from the "First Annual Report of the Social Security Board" which stated that, for "maternal and child health services", 51 plans were submitted (of which 49 were approved) during the five months' period ending June 30, 1936.[14]

Some criticism came as the result of the limited resources made available for the work[15] and in 1939, Congress increased the appropriation to $5,820,000. The Wagner Bill of 1939 would have substantially increased the sums available for this service to the extent that for the third year after the enactment of the law, $35,000,000 could have been spent.[16]

It is quite evident that the "Grants to States for Emergency Maternity and Infant Care" is simply an extension of an already existing service. Its importance comes from the fact that it is one further step in an orderly procession of events which leads ultimately to politically controlled health service. The medical profession has retreated another step from the position it took in 1929 when it success-

fully opposed such a program.

The details of the plan follow a well-known pattern. Congress approved an appropriation of $1,200,000 "for grants to States . . . to provide, in addition to similar services otherwise available, medical, nursing, and hospital maternity and infant care for wives and infants of enlisted men".[17]*

The eligibility of persons for this service depends upon status in the armed forces. Wives of enlisted men, and children under one year of age, excluding families of commissioned officers, master, major, first, technical, staff or platoon sergeants of the Army, chief, first and second class petty officers of the Navy, etc., are eligible to receive service.

The Secretary of Labor is authorized to make allotments to states which have submitted approved plans whereby a state health agency sets up and administers the program. On March 30, 1943, it was reported that 28 states had presented approved plans and the "completion of arrangements for the entire U. S." was expected thereafter.[18]

The real significance of this development lies in the fact that it is another step in the sequence of events leading to the control of health service by the government. While this development, in and of itself, is of relatively little importance, it is conceivable that it may constitute another contributing factor in helping to break down public resistance to a government controlled health program.

The Wagner-Murray-Dingell Bill

A retrospective glance at the events leading up to the present situation in the field of medical care makes the proposals incorporated in the Wagner-Murray-Dingell Bill seem a natural and reasonable consequence. The provisions of the bill come as the logical sequel to its predecessors.

Coverage for dependents, the provision of hospitalization benefits and the supervision of medical service by the Surgeon General can all be traced to the Social Security Act, the Elliot Bill, etc. It is impossible to review the present proposal without being conscious of the fact that it is the culmination of similar proposals from many sources.

Being one of the most comprehensive legislative proposals that Congress has been asked to consider, it is, of course, impossible to discuss here all of the details of the bill. It will, therefore, be necessary to confine our consideration to those portions that apply particularly to the medical and hospitalization benefits. The bill is designed

> "to provide for general welfare; to alleviate the economic hazards of old age, premature death, disability, sickness, unemployment and dependency . . . to establish a Federal system of medical and hospitalization benefits; to encourage and aid the advancement of knowledge and skill in the provision of health services and in the prevention of sickness and premature death".[19]

In order to make the program available for a large percentage of the population, the categories of eligible persons have been expanded. To those individuals who are now eligible to participate in the Social Security program, have been added self-employed persons, farmers, domestic servants, employees of non-profit institutions, etc.

All eligible individuals may make application for themselves and their family dependents for the following services:

1.—"General Medical Benefits", including all services furnished by a legally-qualified general practitioner (of the patient's own choice) in the home, office, hospital or elsewhere, including diagnostic, and therapeutic treatment and care, and periodic physical examination. Local lists of participating physicians will be maintained. Patients may be required to pay a fee for "first service or . . . each service in a spell of sickness or course of treatment".

2.—"Special Medical Benefit" which includes "services requiring special skills or experience" by a qualified physician who is a "specialist" in a particular type of service. Such services are likewise available in home, office, hospital and elsewhere, but only upon the advice of a general practitioner. Specialists will be designated by the Surgeon General "in accordance with general standards previously prescribed . . . utilizing standards and certifications developed by competent professional agencies".

3.—"Laboratory Benefits" which includes "necessary laboratory or related services, supplies or commodities" (outside the hospital) and including "chemical, bacteriological, pathological, diagnostic and therapeutic x-ray, and related laboratory services, physiotherapy, special appliances prescribed by a physician", etc. Such services may be limited in amount.

4.—"Hospitalization Benefits" will be available for

*An appropriation of $4,400,000 has been approved by Congress for this program for the fiscal year ending June 30, 1944.

all types of illness except mental and neurotic diseases, tuberculosis after diagnosis, and workman's compensation cases. Benefits ranging from $3 to $6 per day are available for a maximum of 30 days during the first year. If funds will permit, the maximum number of days for a subsequent year may be increased to 90. Payments may be made direct to the "participating hospitals", within the limits provided, "such payment to be full reimbursement for the cost of essential hospital services, including the use of ward or other least expensive hospital facilities compatible with the proper care of the patient". To be accredited, a hospital must provide "all necessary and customary hospital service", afford adequate professional service, personnel and equipment, and supply all necessary reports, etc.

The direction and administration of the provisions of this portion of the Act are within the powers of the Surgeon General of the Public Health Service, who is "authorized and directed to take all of the necessary and practical steps to arrange for the availability of the benefits" provided. Upon this office falls the responsibility of entering into contracts with various agencies, institutions, persons and groups for the provision of "services, facilities, supplies and commodities" and "to pay fair, reasonable and equitable compensation for such services or facilities".

To advise the Surgeon General concerning the administration of these services, a National Advisory Medical and Hospital Council is established. This Council is to consist of the Surgeon General, as chairman, and sixteen appointed members, selected from a panel of names submitted by various lay and professional organizations concerned with and informed on medical, hospital and related benefits and services.

It is the function of this Council to advise the Surgeon General concerning (1) professional standards for general and special medical benefits; (2) designation of specialists; (3) coordination of professional services; (4) standards for participating hospitals; (5) methods of compensation for medical and hospital services; (6) studies and surveys; (7) grants-in-aid for education and research; and (8) special boards, etc.

The "Guiding Principles and Provisions for Administration" include, (1) free choice of physician, subject to consent of the practitioner; (2) designation of properly qualified physicians as "specialists"; (3) methods of administration and reimbursement that will ensure prompt and efficient care, promote personal physician-patient relationships, provide professional incentives for advancement, stress preventive medicine and economy; and (4) payments to practitioners made according to (a) fee-for-service, (b) per capita, (c) salary, whole or part time, (d) fee-per-session, or (e) a combination or modification of these bases.

The Surgeon General is authorized to "establish necessary and sufficient hearing and appeal bodies to hear and determine complaints" from practitioners, hospitals and individuals eligible for benefits. In disputes involving professional practice or conduct, the hearing body shall have proper professional representation.

Although this proposal contains some features which are the natural outgrowth of previously introduced bills, it provides a significant step in the series of events leading to compulsory health insurance. In setting up the machinery for a nation-wide medical care and hospitalization program, the bill is directed at the solution of a serious social and economic deficiency. In spite of the fact that it proposes a departure of no small extent from the traditional and customary practice of medicine, it is impossible to view it as an unexpected and revolutionary suggestion. The events of several years have been pointing to this very proposal.

SIGNIFICANCE OF ACTIVITIES

Into a pattern of social and economic need, which is the result of (1) scientific advances which have increased the cost of health care, (2) the insistence of the public for the benefits of these advances in medical knowledge, and (3) the gradually increasing acceptance of governmental control in health services,[20] has developed a series of political activities.

It is evident from the course of events that slowly, but with perceptible progress, advances are being made toward the development of a program in which the government will become the main financial support of, and controlling agent for, the practice of medicine. The fact that plans for compulsory health insurance have been introduced in England and Canada, with the favorable support of a substan-

tial proportion of the population in both instances, does not strengthen the position of the advocates for a continuation of the voluntary system.

Because of its specific proposals, the Wagner-Murray-Dingell Bill is the most significant of all recent political activities in the field of health insurance. By reason of its scope and the obligatory participation of a large majority of our working population, some of the principal shortcomings of voluntary plans are overcome. Eliminated are the difficulties caused by cancellation, restricted spread of risks, the inability to emphasize preventive medicine, and services limited to partial coverage, which, according to Maslow, contribute to make the voluntary scheme inefficient, expensive and incomplete.[21]

In contrast, the criticisms of inefficiency due to red tape and "bureaucracy", malingering, and lowered professional standards,[22] by the opponents of compulsory health insurance plans, lose much of their effectiveness because no sound, workable program is offered as a substitute. The medical profession, in opposing this bill, must assume the unenviable task of attempting to persuade the public to refuse this plan in the hope that some better program may eventually be developed through professional sponsorship. No nation-wide plan has been officially endorsed by the medical profession, and for several years many doctors viewed with suspicion any attempt to organize prepayment plans for health services. It is, therefore, not surprising that many people have eagerly welcomed the Wagner-Murray-Dingell Bill, in spite of its apparent weaknesses, because no better plan seems likely.

With that portion of family incomes which exceeds the necessary expenditures for subsistence, and from which payments for health services must come, being drained off in ever-increasing amounts by taxes, the need for some method of spreading the cost of care increases. The advocates of compulsory health insurance indicate no tendency to discontinue their efforts, and the defeat of this bill, which is not at all certain, can only be a temporary stop-gap.

CONCLUSION

In the evolving social pattern of our present democratic philosophy, there is to be found an ever-increasing tendency to accept the theory that the health of the individual is not only his concern but also the concern of society as a whole. Consequently, some method of spreading the costs of medical care will inevitably come.

There is considerable diversity of opinion among authorities concerning the effectiveness of the voluntary system on the one hand, and the compulsory system on the other, in providing an adequate solution to the problem. In recent events, the advocates of the compulsory scheme have made significant progress by the expansion of those health services that are now under the supervision and control of the government, and in providing definite proposals for a nation-wide health insurance system.

The Wagner-Murray-Dingell Bill contains a comprehensive health program which parallels the most recent developments in Britain and Canada, and must be considered as a serious threat to the traditional practice of medicine. It has acknowledged faults and shortcomings, but, since no other proposal for a nation-wide system of comprehensive health service seems probable, it has been reecived enthusiastically by many influential groups.

The only effective method of silencing the advocates of a compulsory health program is the development of a sound, practicable and comprehensive medical service plan. Only aggressive action, with specific proposals, instead of criticisms, can offset the progress made by political agencies.

The implications are evident. In the light of recent events, it is clear that nothing short of a full medical service plan will suffice. Any program suggested must meet full medical needs regardless of an individual's circumstances or geographical location.

Then, too, time is an important factor. As it is, the profession is now on the defensive and delay may be disastrous. Whatever is done must be undertaken immediately.

The need for the program has been sufficiently established, and for the most part, the essential facilities are available. It now remains for the profession to either utilize the experience of the voluntary efforts that have been expended in the field of medical care plans in organizing a prepayment medical service program, nation-wide in scope and comprehensive in coverage, or to prepare to relinquish much of its freedom of enterprise.

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1114 People's National Bank Building.

Floral Eponym (9)

BARTONIA DECAPETALA—PURSH

Benjamin Smith Barton, (1766-1815) was the son of an Episcopal clergyman and the brother of David Rittenhouse. He naturally "belonged" in Philadelphia. He studied drawing under Major Andre when the latter was a prisoner of war. He began his medical studies under William Shippen, Jr. Later he studied in London, Edinburgh, and Gottingen, taking his M. D. at the latter place. When he returned to Philadelphia, the chair of Natural History and Botany was created for him in the College of Philadelphia. Upon the death of Benjamin Rush he became the professor of the Theory and Practice of Medicine. He started the Medical and Physical Journal, the third medical journal in the United States. Because of his "Essay toward a Materia Medica of the United States", he has been called the Father of American Materia Medica. But his chief interest was Botany, although his health precluded his pursuing field studies. In 1807 when Thomas Nuttall came to America, he and Barton became close friends. Nuttall had but scant means and Barton an equally scant store of health. They joined forces and Nuttall set off to explore the northern and northwestern parts of the United States.

A number of plants have been named Bartonia but few of the names have "stuck". Nuttall named two cactus-like plants Bartonia superba and Bartonia polypetala. The Bartonia of Muhlenberg is placed now in the Gentian family. The Bartonia of Sims is now Mentzelia. M. Lindleyi, Torr. and Gray is sometimes listed in the catalogues as Bartonia aurea. M. decapetala (Bartonia decapetala, Pursh) is found from Dakota to Texas. It is commonly called Prairie Lily or Gumbo Lily.

TRIPLETS—A CASE REPORT

B. C. GRIGSBY, M.D.,
Bonny Blue, Virginia.

I have delivered babies in all types of homes, and under all kinds of conditions. Once we borrowed everything from the neighbors, except the baby, but the greatest thrill for me in this business came on the morning of March 28, 1943—the delivery of full term triplets.

About 3:00 A. M., I was called to see Mrs. B. F. K., who was in labor. This lady is 38 years of age, G. VII, P. VI. She had her last menses the latter part of June, 1942. On August 8, 1942, she had her tubes ligated and at the time of the operation it was noted that she was pregnant.

Her pains were not very hard and were far apart. On examination, a breech with one foot down was found presenting with the cervix completely dilated and effaced. The waters were bulging and these were ruptured. An extraction of the baby was made synchronous with her pains—a boy—weight 7 pounds.

On palpating the abdomen, another fetus was felt, and on vaginal examination, another breech with one foot down was found. This baby was delivered in the same manner, as number one—a girl—weight 7 pounds.

Palpating the abdomen again, I felt a third baby. On internal examination, I found the third bag of waters; these were ruptured, and a vertex was presenting. An internal version and extraction was performed. This was a boy—weight 6 pounds, 12 ounces. Incidentally, there was a loose knot in this baby's cord. The anesthetic used was ether—open method.

Soon after the babies were delivered, she was profoundly shocked. This was immediately treated, and she reacted nicely.

There were three placentae; two were fused, and the third was off to itself, reminding one of a placenta succenturiate.

All three babies are normal, and were placed on a formula. At the present time, all are doing well, with the little girl out-growing the boys.

On account of whooping cough being in the neighborhood, they were given pertussis combined vaccine—

3rd day ½ cc.
7th day 1 cc.
11th day 1 cc.
15th day 1 cc.

They have not taken whooping cough.

The mother had an uneventful puerperium—thanks to sulfanilamide. She remained in bed two weeks, but wanted to get out at the end of the first week.

I went down to see the babies on May 4th and the mother was doing most of her house work, and the family wash.

The American Home Products Corporation

Announces that Knox Ide has been elected president and Walter F. Silbersack executive vice-president and general manager of the corporation, manufacturer of drugs, foods and household products. Mr. Ide has been executive vice-president of the corporation and Mr. Silbersack has been vice-president in charge of all advertised products.

Their promotions follow the election of Harry S. Howard, former president of American Home Products, as president of Wyeth, Inc., the great new ethical drug company which American Home Products has formed as a wholly-owned subsidiary.

A Streamlined Process of Penicillin Production,

Resulting from two years' research in the Parke, Davis Laboratories, promises to substantially cut down the production time required, according to a statement of the General Manager of the Company. He stated that the present method of producing penicillin requires from 6½ to 14 days, but they have advanced their methods to where they can produce in 2½ to 3 days without using cumbersome equipment.

This company is now regularly supplying penicillin to the government and has recently expanded its facilities for producing the new "miracle" drug.

THE NATURE AND MANAGEMENT OF COUGH

PORTER P. VINSON, M.D.,
Medical College of Virginia,
Richmond, Virginia.

Cough is a sudden, expulsive, respiratory effort that may be either non-productive or accompanied by evacuation of material from the mouth, pharynx or tracheobronchial tree. This explosive expiration may be noisy or relatively quiet, infrequent or continuous, and simple or spasmodic, depending on the nature of the exciting lesion and on the sensitivity of the cough reflex.

Many types of cough have been described. Such terms as "habit cough", "cigarette cough" and "stomach cough" have been employed in differentiation, whereas the terms "dry" or "productive" indicate whether the cough is unaccompanied by, or associated with, secretion.

The cause of cough may be either intrathoracic or extrathoracic in origin, but the chief factor that determines severity and frequency is the irritability of the cough reflex. Ordinarily, any lesion in the hypopharynx, larynx or thorax may be expected to produce cough, but many patients with gross lesions in these localities have little, if any, cough. The occurrence of a primary malignant lesion in the tracheobronchial tree, without cough or other pulmonary symptoms, has been recorded many times. In contrast to the patients with no cough, yet presenting lesions that are usually associated with irritation of the cough reflex, are those patients who cough frequently, sometimes incessantly, without production of secretion, in whom no organic lesion can be detected. This type of cough is similar to the frequent clearing of the throat in the nervous after-dinner speaker, and a nervous basis can usually be ascertained in patients with this kind of cough.

Too often cough is considered a disease rather than a symptom of a disease, and efforts are made to control it without determining the cause or without considering the desirability of reducing or abolishing the cough reflex. Cough should be encouraged in all patients who have secretion in the tracheobronchial tree. Sedatives are frequently administered to patients who are bleeding from the lung, with the result that the cough reflex is abolished, blood is retained in the bronchi and infection ensues. All secretion should be evacuated from the tracheobronchial tree, and ordinary cough provides the most effective and comfortable method of evacuation. Administration of drugs that reduce the cough reflex have little value in controlling bleeding from the lung.

In a recent report, Phelps[1] stated that of 67 patients who were found to have tuberculous tracheobronchitis 65 were women. The preponderance of women who suffer from tuberculous lesions in the trachea and bronchi is probably the result of voluntary control of cough, with retention of secretion laden with tuberculosis bacilli in the tracheobronchial tree. Almost all patients whom I have found to have a tuberculous lesion in the trachea or bronchus have been women, unless the lesion was secondary to ulceration of a tuberculous mediastinal lymphatic node into the lumen of a bronchus.

Another interesting fact is that patients who have tuberculous tracheobronchitis are particularly tolerant to bronchoscopy, which indicates that there is reduction in the irritability of the cough reflex.

There is universal agreement that post-operative pulmonary complications, especially so-called post-operative pulmonary atelectasis, result from interference with normal respiratory function. A major factor in reducing the efficiency of pulmonary activity after operation is the administration of excessive doses of a sedative, particularly morphine or one of the barbiturates. In an effort to increase post-operative comfort by administration of a sedative, the cough reflex may be diminished or abolished, and serious pulmonary complications may ensue.

When cough is chronic and not associated with production of secretion, administration of a sedative drug that may be habit forming is inadvisable. Cough of this type can usually be controlled voluntarily or by the use of menthol lozenges or fruit flavored candy drops.

SUMMARY

1. Cough is a symptom and not a disease.

1. Phelps, K. A.: Some Further Observations on Tuberculous Tracheobronchitis, Tr. Am. Bronch.-Esoph. Assn. 77, 1942.

2. Treatment should be directed to the underlying cause.

3. Cough that is productive of secretion is beneficial and should be encouraged.

4. Non-productive cough is usually caused by emotional factors, is unnecessary and can be controlled voluntarily. Drugs should not be employed in treatment.

5. Sedative drugs inhibit the cough reflex and when administered in excessive amounts after operation may result in serious pulmonary complications from retention of secretion in the tracheobronchial tree.

PUBLIC HEALTH

I. C. RIGGIN, M. D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for September, 1943, compared with the same month in 1942, and for the period of January through September, 1943, compared with the same period in 1942, follows:

	Sept. 1943	Sept. 1942	Jan.-Sept. 1943	Jan.-Sept. 1942
Typhoid and Paratyphiod Fever	31	33	165	185
Diarrhea and Dysentery	808	552	4,702	3,941
Measles	73	17	9,392	4,803
Scarlet Fever	91	93	1,230	872
Diphtheria	36	61	239	332
Poliomyelitis	11	13	41	32
Meningitis	10	7	731	127
Undulant Fever	2	4	28	26
Rocky Mountain Spotted Fever	9	4	51	42
Tularemia	5	0	37	31

BLOOD PLASMA STORES

The following hospitals have received grants from the U. S. Public Health Service for the purpose of setting up blood plasma processing and storage facilities for liquid or frozen plasma to be made available for emergency medical service in the following amounts:

King's Daughters Hospital, Portsmouth---500
Lynchburg General Hospital, Lynchburg--380
Norfolk General Hospital, Norfolk-------288
Hospital of St. Vincent de Paul, Norfolk--282
U. S. Marine Hospital, Norfolk---------915

In addition to the grantee hospitals many other hospitals in Virginia have set up their own blood banks, and considerable quantities of plasma are also available from those sources.

Besides the liquid plasma, there are 1200 units of dried plasma now stored in strategic points in defense areas which are available for use in case of emergency for *any* cause.

It is expected that these stores will be freely used whether the emergency be due to enemy action or civilian catastrophe.

Superintendents of institutions which are not equipped with Office of Civilian Defense blood plasma banks may in an emergency obtain necessary supplies upon application to their respective local chiefs of emergency medical services.

In instances where a disaster occurs in a community in which the local chief is not available, telegraphic application should be made direct to the state chief of medical service, Dr. I. C. Riggin, State Department of Health, Richmond.

Arrangements have been developed with the Civilian Air Patrol to transport blood plasma and other medical supplies by plane to any point in the state.

In this connection, it will not be necessary for landing fields to be available at the point of need as especially designed parachute equipment recently has been perfected that will enable the pilots to drop supplies safely at the indicated locations.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-one year old white woman who had had one previous pregnancy. She was not seen by a physician during the present pregnancy until the eighth month when she precipitately delivered, before the arrival of a physician, a premature infant weighing three pounds. Four days before the delivery epigastric pain associated with vomiting and diarrhea had occurred and persisted. Fever and abdominal distention were present. After the premature delivery the patient was referred to a hospital where she was admitted twenty-four hours postpartum.

At the time of admission the patient was acutely ill with marked abdominal distention. Temperature 102.4. Pulse 160. Respirations 20. Urine showed albumin and a few granular casts. Rbc 4.80, Hemoglobin 84 per cent, wbc 7,550, N.P.N. 60 mgm. and total protein 5.1 mgm.

Treatment consisted of Wanganstein suction prostigmine, rectal tube, and repeated blood transfusions. Two days after admission a mass separate from the uterus was palpated in the right lower quadrant. Sulfathiazole was given and the patient placed in an oxygen tent. An x-ray of the chest showed what was thought to be either multiple infarcts or patchy atelectasis.

Two days later the abdominal mass was larger and as the patient seemed to be getting worse, it was decided to drain the mass. A McBurney incision was made under local anesthesia. No definite abscess was found, but the abdomen was filled with foul smelling milky-appearing fluid. Two drains were placed in the abdomen. Her condition grew gradually worse (temperature 105) and she died twenty-eight hours after the incision and drainage.

A postmortem examination showed the peritoneal cavity filled with pus. The distal two thirds of the appendix was gangrenous and had perforated in three areas.

COMMENT

This case has been classified by the committee as a non-obstetrical (medical) death. The autopsy showed the cause of death to be a general peritonitis resulting from a ruptured gangrenous appendix. The pregnancy and the premature delivery were coincidental. Obviously of course the patient neglected herself in that she should have consulted a physician at the time of onset of the abdominal pain, when an early diagnosis and prompt appendectomy would probably have saved her life. The diagnosis of appendicitis during pregnancy particularly in the latter months is usually difficult. The treatment of appendicitis during pregnancy is the same as the treatment of appendicitis at any other time. The appendicitis in this patient was simply an accidental complication of the pregnancy, and as in practically all the diseases accidentally complicating pregnancy, it is apt to be more severe and have a graver prognosis during pregnancy than in the non-pregnant individual. Miscarriage or premature delivery is a common occurrence in patients seriously ill with accidental complicating diseases, and when it does occur, as in this present patient, it increases the gravity of the prognosis.

This case is presented simply to point out the fact that not all patients who die during pregnancy or the puerperium necessarily die from obstetrical causes. The lesson to be learned from the present case is that appendicitis can and does occur during pregnancy and the puerperium, and that it is essential to recognize and treat it promptly.

MENTAL HYGIENE NOTES

Neuropsychiatric Society of Virginia.

The fall meeting of this Society was held in the ampitheatre of the University of Virginia Hospital, Charlottesville, October 13, 1943.

The meeting was called to order by the President, Dr. Joseph R. Blalock. Dr. O. B. Darden, Vice-President, and Dr. Jas. Asa Shield, Secretary-Treasurer, were present.

The first presentation was a report on lobotomy. Dr. Meyersburg gave a summation of observation on the cases treated at the University of Virginia Hospital after Dr. Wilson's preliminary remarks at which time he stated they were interested in studying these cases in every respect before and after operation and that they would be glad to have the opportunity of studying any case that the members of the Society could make available. Dr. Meyersburg said that the most notable change was in the anxiety, as pointed out by other observers, but added that ordinary anxiety and every day concern were not changed. He said the mood swings occurred but anxiety was lacking. In acute hallucinosis he said there was not the concern, and he felt in some of the cases the delusions had cleared. He pointed out that somatic complaints continued, but this hypochondriasis was not as debilitating. He stated the patients are slowed up in their mental drive, in their motor drive, that they are less sensitive, and are more expressive of their emotional mood—loud laughter or rather profound rage; that this mood is transient. Dr. Meyersburg said these people had had some difficulty in adaptation, that anything more than simple demands was beyond their capacity. He brought out the fact that one of their cases had developed convulsions, first having status epilepticus, then later two convulsions, followed by another some weeks after that. He went on to say they had treated several classes of mental illness.

The cases were then presented by Dr. Wilson.

Dr. Rymarkiewiczowa brought out the fact that some formal psychological testing did not seem to bring out the impairment of menetal function which was definitely observed in these individuals; with the Rorschach and to a certain extent with the Kohs Block Designs changes in mentation were recorded. She also made the very interesting observation that these people had much more difficulty in recalling, as brought out by the noun test—with eyes closed they could name very few but with eyes open they did fairly well with the objects around to observe.

Dr. Crutchfield then presented very concisely and vividly the operation that he performs; he brought out the fact that people with incurable illnesses may be relieved of at least some of their worry and apprehension and, therefore, their malignancy or permanent disability would be endured with less discomfort on their part.

The second presentation was a paper by Dr. Page Newbill—"Occurrence of Brain Tumors in the Race and Sex, With Special Reference to Meningiomas". He pointed to the fact that there was some variation from the expectancy in meningiomas found in the negro race. However, he said that in both his series and the observation of other surgeons, according to communication, it was revealed that a very small number of negroes are operated on for meningioma.

A business meeting followed at which time Dr. Neale, of the Medical College of Virginia, was elected to membership, and Dr. Ransome, of the Veterans Administration Facility, Roanoke, and Dr. Bridgewater, of the Colony, Petersburg, were proposed for membership—their names will be passed on to the executive board for consideration.

The meeting then adjourned after which a delightful dinner was enjoyed by the members and guests at the Farmington Country Club.

Members present: Dr. Blalock, Dr. Darden, Dr. Wilson, Dr. Crutchfield, Dr. Masters, Dr. Gayle, Dr. Brent, Dr. Henry, Dr. Stone, Dr. Strickler, Dr. Saunders, and Dr. Shield. Guests present: Dr. Ransome, of Roanoke; Dr. Neale, of the Medical College of Virginia; Dr. Bridgewater, of the Colony at Petersburg; Dr. Rymarkiewiczowa, Dr. Meyersburg, Dr. Newbill, and others on the staff of the University of Virginia Hospital.

JAS. ASA SHIELD,
Secretary.

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

Reaction to Injury. Pathology for Students of Disease Based on the Functional and Morphological Responses of Tissues to Injurious Agents. By WILEY D. FORBUS, M.D., Professor of Pathology, Duke University and Pathologist to the Duke Hospital. Baltimore, The Williams and Wilkins Company. 1943. xix-797 pages. 532 illustrations, 20 of which are in color. Cloth. Price $9.00.

Synopsis of Tropical Medicine. By SIR PHILIP MANSON-BAHR, C.M.G., D.S.O., M.D., F.R.C.P., Senior Physician to the Hospital for Tropical Diseases, Royal Albert Dock and Tilbury Hospitals; Consulting Physician in Tropical Diseases to the Dreadnought Seamen's Hospital, London; etc. The Williams and Wilkins Company, Baltimore. 1943. 224 pages. Cloth. Price $2.50.

Fractures and Dislocations for Practitioners. By EDWIN O. GECKELER, M.D., Fellow of the American College of Surgeons; Fellow of the American Academy of Orthopaedic Surgeons; etc. Third edition. A William Wood Book. The Williams and Wilkins Company, Baltimore. 1943. x-361 pages. Cloth. Price $4.50

New and Nonofficial Remedies, 1943, containing descriptions of the articles which stand accepted by the Council on Pharmacy and Chemistry of the American Medical Association on January 1, 1943. Cloth. Price, postpaid, $1.50. Pp. 772. Chicago: American Medical Association, 1943.

The current volume of New and Nonofficial Remedies continues, with minor improvements, the convenient and informative system of classification adopted for the 1942 volume. The terminology of the official drugs has been revised to conform to the U.S.P. XII and the N.F. VII. The valuable bibliographic index now appears on white instead of "India Tint" paper, and before the general index which is now placed at the end of the book. To one accustomed to the old format of New and Nonofficial Remedies the new arrangement appears at first somewhat awkward but with a little use the wisdom and convenience of the changes becomes more and more apparent.

Textual changes and revisions do not appear to be as numerous as in some previous editions. The chapter, Digitalis and Digitalis-like Principles and Preparations, has been extensively and somewhat radically revised to keep pace with the changing attitude toward this drug. It is understood that in this revision the Council had the aid of the foremost digitalis authorities, pharmacologists and clinicians alike. Other revisions have been made obviously to keep the book up to date with medical knowledge.

No one can examine the successive volumes of New and Nonofficial Remedies without increasing his profound respect for the faithful and unselfish work of the Council on Pharmacy and Chemistry in the cause of rational therapeutics. Each volume represents a progressive milestone on the road of medical science.

Rehabilitation of the War Injured. A Symposium Edited by WILLIAM BROWN DOHERTY, M.D., and DAGOBERT D. RUNES, Ph.D. Philosophical Library, New York. 1943. 684 pages. Illustrated. Cloth. Price $10.00.

This is a collection of articles previously published in various medical journals of the U.S.A., U.S.S.R., and Great Britain, all of which are readily available. This presents nothing new and does not fill any need in the medical literature.

The subject matter is presented under several general classes. The first deals chiefly with the experiences of the British in the difficult matter of the rehabilitation of the cases of "head injury" and the psychic response of these men to injury.

The reconstructive and plastic group unfortunately, and probably of necessity, presents many of the familiar faces previously seen and better illustrated in the original articles. The principles are sound and are, of course, well known by all who are engaged in this highly specialized branch of surgery.

Considerable emphasis seems to be put on the psychic reaction of the patient to orthopedic injuries and the shortened convalescence of these men when early function is resumed and taught. This point seems worth remembering. The remainder of the section on the orthopedic aspects of rehabilitation deals with vocational rehabilitation, amputation stumps and physical therapy.

The immersion foot syndrome is interestingly described by James C. White. He indicates that the painful swelling seen following exposure of the feet to cold is based upon a different mechanism than the painful swelling of feet and legs seen in survivors of shipwreck in warm water.

It seems unfortunate that the role of the sympathetic nervous system in controlling pain and disability after injury to extremities is so lightly treated as to be almost ignored.

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VOL. 70 NOVEMBER, 1943 No. 11

Claude Bernard Bowyer

THIS year when our very existence as a nation depends in great part upon our factories; a year when labor is driving and capitalism has a back seat; a year when industrial plants do not know night from day, or Sunday from Monday, and a time when "Absenteeism" is a dread disease; it seems particularly appropriate that the Medical Society of Virginia should have chosen for its new President a man whose special forte is industrial medicine, as well as a man whose ability and experience, both medical and administrative, seem to have more than adequately prepared him for such a responsibility.

A doctor by predestination as well as election, for there has been a physician in each generation of his family since the Revolution, Dr. Claude B. Bowyer was born in Washington County and, as a matter of fact, on the campus of Emory and Henry College, Christmas Day, 1880. He got his first taste of industrial medicine when he engaged in a mining practice in Stonega, Wise County, Virginia, following his graduation from the Medical College of Virginia in 1906. This apparently was indelible for, although he came to Richmond again three years later to interne at Memorial Hospital, as soon as he had finished that training he took the position he still holds—that of Chief Physician for the Stonega Coke and Coal Company.

Dr. Bowyer's interest in industrial medicine has not been localized, however. In 1912 he took a special course in his chosen field at the New York Postgraduate Medical School, and still more of this work at Harvard in 1921. He is widely known for the prominent part he played in the framing of Virginia's Workman's Compensation Laws, and is a charter member of the College of Industrial Physicians and Surgeons of the American Medical Association.

As to Dr. Bowyer's administrative abilities, perhaps nothing gives more credence to them than his development of the Stonega Hospital as an industrial institution where he now has some eight assistants. In addition to this Dr. Bowyer organized the Clinch Valley Medical Society, and is a charter member of the Wise County Medical Association. Moreover, he was on the Council of the Medical Society of Virginia from 1918 to 1942, and is on the Board of Visitors of the Medical College of Virginia.

CLAUDE BERNARD BOWYER, M.D.,
President, Medical Society of Virginia.

Outside the field of medicine our new President's activities are equally varied. A physician, a banker, a golfer and a president of a country club, gosh! what a combination. For good measure he is a sociable Kiwanian, a Methodist, a Democrat and a member of the Executive Board of Trustees of Emory and Henry College, from which he received his academic degree in 1902.

How this remarkable man has remained a bachelor is an enigma.

In any case, the Medical Society of Virginia has every reason to look forward to a stimulating and efficient year with a man for its President whose record, both in the field of medicine, and in his community is one of distinguished service, and a man who has devoted thirty-five years to a subject more pertinent, more applicable, today than ever before. It is with confidence, and anticipation, then that we welcome Dr. Claude B. Bowyer.

D. B. C.

Bathsheba

"And it came to pass in an eveningtide, that David arose from off his bed, and walked upon the roof of the king's house: and from the roof he saw a woman washing herself; and the woman was very beautiful to look upon." II Samuel 11:2.

THE woman was the wife of Uriah, the Hittite. Now Uriah was off fighting David's battles, so the king sent messengers and took her and possessed her. When the woman conceived, the king tried to bribe Uriah to lie with his wife and when that failed, he sent him to the front-line trenches, and that was the end of Uriah. With David, it was the beginning of his troubles. The Lord sent Nathan, the prophet, to admonish David, and even after David repented, the Lord was not pleased. "Howbeit, because of this deed thou hast given great occasion to the enemies of the Lord to blaspheme, the child also that is born unto thee shall surely die".

The record does not say what defense Bathsheba put up. It does say that she was beautiful to look upon, that she was virtuous and well thought of in the community, and that she was attending to her own business. It was a man's world that she lived in, and what she said was not recorded. Whatever it was, it was of no avail. She lost her honor, her husband and her son, and became just one of the king's wives.

Medicine, today, we fear, finds herself in the same situation. Because she is beautiful and useful and well thought of, Washington has cast covetous eyes upon her. She is inclined to extol her virtue and look to a sense of right and justice to save her. That just makes matters worse; it makes Washington all the more determined to possess her. What she needs is power, which in political language means VOTES.

Salerno

THE place that figures so prominently in the news of today, played a significant part in the history of Medicine. The School of Salerno flourished from the beginning of the ninth to the end of the fourteenth century. Like Montpellier in the beginning, Salerno was purely a medical school. Its origin is veiled in mystery. In the fourteenth century it was overshadowed by Montpellier and Bologna and was finally put out of existence by Napoleon. In its heydey it attracted students from all over the world so that it merited its medieval name, Civitas Hippocratica. It is noteworthy on six counts: 1. As the place where lay Medicine emerged from ecclesiastic domination; 2. It was at Salerno that decadent Greek Medicine was rejuvenated by Arabian learning; 3. The first medical-practice act in the western world (Persia may have anticipated Salerno) was enacted at Salerno. The home of Roger of Parma, the Surgeon; 5. Trotula; and, 6. The *Regimen Sanitatis Salernitanum.*

In the middle ages all knowledge, including Medicine, was confined to the monasteries. The monks practiced Medicine on the side, often going outside the monasteries to practice their healing art. This took them away from their religious duties so that various Church Councils in the XII century restricted this practice and finally stopped it entirely. Among the monastery schools in which Medicine was taught, the nearby Benedictine Abbey of Monte Casino was famous in the ninth century. Yet, in the School of Salerno most of the teachers were laymen. Jew, Saracen, Greek, and Roman met on equal terms. In fact, there is a tradition that the four founders were equally divided among these races.

The stream of Greco-Roman Medicine had almost run dry when about 1077 Constantinus Africanus located at Salerno and brought with him an encyclopedic knowledge of Arabian Medicine and a collection of manuscripts which he began translating.

His translations of the Aphorisms of Hippocrates, some of the works of Galen, and the Royal Book of Ali Abbas tremendously stimulated medical writing. Medicine, Surgery, and Anatomy were revolutionized by these new books. To the Arabian scholarship the Salernitans contributed a direct, practical attitude.

After Constantine the fame of Salerno spread rapidly. This was due in some measure to the interest that the rulers of the two Sicilies took in the School. As early as 1140 King Roger decreed that a physician before beginning practice should get the approval of the royal authorities "in order that the King's subjects should not incur dangers through inexperience of their physicians". Roger's grandson, Frederick II, made very explicit laws governing the teaching of Medicine. Before anyone entered the study of Medicine, he had to have three years of philosophic and literary studies. The medical course, itself, extended over five years and was followed by one year of assistantship to an experienced practitioner. He then came up for his examination before the University authorities. It all sounds quite modern for the Middle Ages.

In the middle of the twelfth century Salerno had a celebrated surgeon by the name of Roger of Parma. His teachings and conversations were taken down by his students and became the Surgery of Roger. This was used not only at Salerno but at Bologna as well, and its various modifications became the "Surgery of Roland", the "Surgery of the Four Masters", etc. The treatment recommended for injuries of the skull, stone in the bladder, and goiter, is especially noteworthy. The book was regarded as classic for three centuries.

Of the "Ladies of Salerno" Trotula was easily the most famous. Nearly everything connected with Salerno was surrounded by a certain amount of mystery; the origin of the School, and how Roger, the Surgeon, acquired so much from Paulus Aeginatae, to mention just two items. We would naturally expect a lot of mystery when we discuss its feminine aspects, and such, indeed, is the case. Modern scholars instead of clarifying the situation have made it more confused. By some, Trotula is said to have been a doctor and to have taught in the University, by others to have been a skilled midwife, and by still others that she did not exist at all and the name is merely a generic one for midwives. Many consider her to have been the wife of John Platearius of the well-known medical family of Salerno. She has been called Trotula, Trotta, Truta, Trocula, Trocta, Trothis, Dame Trot, Magistra Operis, Erotula, and Eros Juliae. She is said to have flourished before the advent of Constantine, but the work that bears her name is dated by scholars in the thirteenth century. Corner, who is a real authority on Salerno, says that "The Registers and Obituary of the Cathedral, which name many doctors and many women of all rank, do not apply the title, *medica,* to a single woman." Be that as it may, the work served as a textbook throughout Europe until the sixteenth century, and today, is a valuable source for gynecological and obstetrical knowledge (or lack of knowledge) of the Middle Ages. It was scattered all over Europe in manuscript form. Kate Campbell Hurd Mead lists five thirteenth century manuscripts, seven fourteenth century manuscripts, and seven fifteenth century manuscripts and says that the list is not complete. The work first appeared in print in 1544 at Strassburg. The Richmond Academy of Medicine has an edition printed in Leyden in 1572. It is more readily available in the collection of gynecological works of Israel Spach (1597) and Caspar Wolf (1566), later enlarged by Caspar Bauhin (1586). Recently, (1940) the Ward Ritchie Press has brought out an English translation by Elizabeth Mason-Hohl in an attractive little volume.

The most famous of all the works of the Salerno School is the Regimen Sanitatis Salernitatum, a didactic poem covering hygiene, anatomy, physiology, materia medica, etiology, significance of different signs, pathology, therapeutics, nosology, and practice

of Medicine. This famous poem was translated into many languages and went through nearly 300 editions, one of which contained 3,520 verses. The following lines are from the translation of Sir John Harington:

The Salerne Schoole doth by these lines impart
All health to England's King, and doth aduise
From care his head to keepe, from wrath his heart,
Drinke not much wine, sup light, and soone arise,
When meate is gone, long sitting breedeth smart:
And after-noone still waking keepe your eyes.
When mou'd vou find your selfe 'o Nature Needs,
Forbeare them not, for that much danger breeds,
Vse three Physicians still; first Doctor Quiet,
Next Doctor Merry-man and Doctor Dyet.

Societies

The Fourth District and Southside Medical Society

Held its annual meeting at the Southside Community Hospital in Farmville, September 28th, with Dr. B. H. Knight of Surry presiding. Other officers present were Dr. C. E. Martin, secretary-treasurer, and Dr. Wright Clarkson, chairman of the steering committee. There was an unusually large attendance.

The program was as follows: Traumatic Lesions of the Abdomen by Dr. Carrington Williams, Richmond; Immunization against Diseases of Today by Dr. W. Ambrose McGee, Richmond; Sterility by Dr. William Bickers, Richmond; Recognition and Management of Ruptured Ectopic Pregnancy by Dr. Thomas G. Hardy, Farmville; Report and Discussion of Abdominal Operations by Dr. George H. Reese, Petersburg; and Infectious Mononucleosis by Dr. Ray Moore, Farmville.

Dr. T. S. Jennings of Waverly was elected president, and Dr. Leta White, Petersburg, and Dr. C. E. Martin, Emporia, were re-elected corresponding secretary and secretary-treasurer respectively. Dr. Wright Clarkson, Petersburg, was also re-elected chairman of the steering committee. Dr. C. W. Scott, Burkeville, was elected to membership.

Resolutions were passed unanimously that the corresponding secretary be instructed to write the representatives in Congress with regard to Senate Bill 1161.

Following the business meeting, dinner was served in the hospital dining room.

C. E. MARTIN,
Secretary.

Roanoke Academy of Medicine.

At the annual meeting of the Academy the following officers were elected and entered upon their duties on October 1: President, Dr. A. M. Grosclose; vice-presidents, Dr. L. D. Keyser and Dr. J. B. Nicholls; secretary-treasurer, Dr. D. S. Garner. All are of Roanoke except Dr. Nicholls who is at Catawba Sanatorium.

Norfolk County Medical Society.

At the regular meeting of this Society on October 18th, the program was presented by the Naval Hospital Staff as follows: Treatment of Burns by Lt. Commander A. J. Mourot; Diagnosis and Treatment of Intervertebral Disc by Lt. H. H. Karr; Discussion and Demonstration of the Strader Splint by Lt. Commander J. D. Wilson; and Use of Penicillin in Sulfa-resistant Gonorrhea by Lt. Commander D. E. Banks.

Dr. N. F. Rodman is president of the Society and Dr. Lockburn B. Scott, secretary.

The Medical Association of the Valley of Virginia

Held its semi-annual meeting at Stonewall Jackson Hotel, Staunton, on September 30, at 11:00 A. M., with Dr. N. M. Canter of Harrisonburg presiding. There was a good attendance including some of the doctors from the Woodrow Wilson Hospital. In addition to several clinical case reports, the following program was presented: Address by the President; Polypoid Tumors of the Colon by Dr. R. P. Bell of Staunton; Some Problems of Medical Edu-

cation Resulting from the War by Dr. J. P. Gray of the Medical College of Virginia; and The Dissecting Aneurysms of Aorta, with report of a case, by Dr. G. S. Hartley of Clifton Forge.

Dr. Theron Rolston, New Hope, was elected president for the ensuing year; Dr. Julian Beckwith of Clifton Forge and Dr. Benj. B. Dutton of Winchester, vice-presidents; and Dr. H. G. Middlekauff of Weyers Cave and Dr. Harold W. Miller of Woodstock were re-elected treasurer and secretary, respectively. It was decided to hold the next meeting in Harrisonburg in May, 1944. Following the meeting, luncheon was served at the hotel.

The Piedmont Medical Society

Met at Farmington on September 17th, with an attendance of seventy-three. The program was presented by members of the staff of the Woodrow Wilson Memorial Hospital at Staunton. Lt. Colonel John H. Lyons spoke on "Prevention of Tetanus" and Major T. R. Tyson on "Marie-Strumpell Arthritis in Civilian Life and the Armed Forces". Both papers were freely discussed. A dinner followed the business meeting. Dr. Percy Harris, Scottsville, is president of the Society, and Dr. E. D. Davis, Crozet, secretary.

The Virginia Peninsula Academy of Medicine

Met in Newport News on September 20th, with 61 doctors in attendance. Lt. Colonel W. F. Martin of Langley Field spoke on "A New Operative Procedure for the Treatment of Pilonidal Cyst and Sinus". This was illustrated with motion pictures.

The Academy meets on the third Mondays in each month at the Coca Cola Building in Newport News. Dr. Waverly R. Payne is president and Dr. Robert H. Wright, Jr., secretary.

News

Southern Medical Association.

The Southern Medical meeting is to be in Cincinnati, November 16, 17, and 18, under the presidency of Dr. Harvey F. Garrison of Jackson, Miss. All activities—meetings and exhibits—are to be held in the three principal downtown hotels, within a block of each other, so that there will be no transportation worries, once doctors reach Cincinnati. Reservations should be made in advance. There is no registration fee at Southern Medical meetings. Further information may be secured from the Association headquarters, Empire Building, Birmingham 3, Alabama.

"Pioneers of American Medicine".

Pharmacy's role in World War II and its success in making America independent of foreign sources for supplies of vital drugs, such as digitalis, will be keynote topics at unveiling ceremonies for the fifth painting in the famed "Pioneers of American Medicine" series in Philadelphia November 5, during National Pharmacy Week.

The 1943 painting is entitled "the Father of American Pharmacy" and depicts Procter (1817-1872), studying a formula for the standardization of drugs while at work with an assistant in his laboratory. He edited the American Journal of Pharmacy and founded the American Pharmaceutical Association. His chief contribution, however, was the standardization of drugs for which there was a crying need because of the failure of compounds due to varying methods of preparation.

On this occasion, there will be a special exhibit of drug producing plants formerly imported, now cultivated in the United States.

In 1917, while a Navy medical corps pharmacist at Brest, France, Frank F. Law, president of John Wyeth & Brother, Inc., conceived the plan of creating an enduring monument in oils to American medical pioneers when he witnessed the marvels of American surgery among battle wounded. His dream came true five years ago when, at his behest, the Wyeth company commissioned Cornwell to begin the series.

Other paintings in the series, which are loaned to medical schools and medical societies, are "The Dawn of Abdominal Surgery", a tribute to Dr. Ephraim McDowell, depicting the world's first successful ovariotomy; "Beaumont and St. Martin", honoring Dr. William Beaumont, who pioneered in

the study of the stomach's digestive functions; "Osler at Old Blockley", in honor of Sir William Osler, pioneer teacher of clinical medicine, and "Conquerors of Yellow Fever", a tribute to Drs. Walter Reed and Carlos Finley, whose work made possible construction of the Panama Canal, vital wartime lifeline. Twelve paintings are contemplated for this series, one to be unveiled each year.

Married.

Dr. William Hughes Evans and Mrs. Elizabeth Miller Williams, both of Richmond, September 29th. Dr. Evans is a graduate of the Medical College of Virginia, class of '36. Mrs. Evans is the daughter of Dr. Roshier Miller.

Lt. Wier Mitchell Tucker, M.C., U. S. Army, and Miss Linden Crawford, Rosemont, Pa., October 2nd. Dr. Tucker is a graduate of the Department of Medicine, University of Virginia, class of '42, and is a son of Dr. and Mrs. Beverley R. Tucker of Richmond.

Dr. Fred Eugene Hamlin and Miss Helen Betelle, Roanoke, October 9th.

Major Joseph M. Dixon, M.C.,

Has been assigned to temporary duty at the Medical College of Virginia where he will head the 313th Service Unit to relieve Colonel Paul L. Freeman. He was formerly stationed with the procurement and assignment of medical officers in Virginia. Dr. Dixon is a graduate of the Medical College of Virginia in 1935 and practiced at Roanoke before entering the Service.

The State Hospital Board,

At a meeting on October 14, named Dr. W. W. Riese of the Medical College of Virginia faculty to the position of consulting neuropathologist at the Eastern State Hospital, Williamsburg, and reported that Dr. George W. Brown had accepted the Board's offer as consulting physician at this hospital.

The prizes given annually in competition among State hospital staff members to encourage research and improved treatment of patients were given in the order named to Dr. I. S. Zfass and Dr. W. W. Riese for a paper entitled "A Preliminary Report of the Study of 200 Autopsy Cases at Eastern State Hospital, with Special Emphasis on Neuropathology and Brain Tumor in Old Age"; Dr. Simon Coren of Central State Hospital for "An Analysis of the Criminally Insane in Virginia"; and to Dr. Vincent E. Lascara, also of Central State Hospital, for his paper on "Neurospyhilis with a Two-Year Observation of the Comparative Therapeutic Effects of Inoculation Malaria and Artificial Fever Therapy".

These papers were judged by Dr. Winfred Overholser of St. Elizabeth's Hospital, Washington, D. C.

Dr. Charles H. Dow,

Chilhowie, has been promoted from Captain to Major in the Medical Corps, U. S. Army. He is now stationed at the Pueblo Army Air Base at Pueblo, Colorado.

Commander J. F. Terrell, MC., USN.,

Has recently been appointed executive officer to the commanding officer of the new Pleasanton Naval Hospital in California. The hospital will house approximately 1000 beds and is expected to expand as the war progresses. Commander Terrell is a native of Essex County, and is a graduate of the Medical College of Virginia.

Dr. C. C. Fabric,

For a time associated with the Hercules Powder Company at Radford, is now in Arizona, at 2001 North Park Avenue, Tucson.

Dr. Edward V. Siegel, II,

After practicing for a time in Hampton, is again at the University of Virginia Hospital, Charlottesville, where he took his intern work after graduating in 1940.

Salmon Lectures for 1943.

Dr. Abraham A. Brill, one of the nation's leading psychoanalysts and an authority on the teachings of Dr. Sigmund Freud, will deliver the Salmon Lectures for 1943 at the Academy of Medicine, 2 East 103rd Street, New York, on three successive Friday evenings—November 5th, 12th and 19th.

The Salmon Committee on Psychiatry and Mental Hygiene, appointed by the Council of the New York Academy of Medicine which is sponsoring the lectures, has extended an invitation to all members of the medical profession and their friends to attend.

The Salmon Lectures, now in their eleventh year, are delivered annually by an outstanding specialist in the field of psychiatry, neurology or mental hygiene, either in this country or abroad, who has made the greatest contribution to his specialty during the preceding year.

Dr. Brill, who at one time served as clinical psychiatrist at Austalt Burgholze in Zurich, Switzerland, is now Lecturer in Psychoanalysis and Abnor-

mal Psychology at New York University, Lecturer in Psychoanalysis and Psychosexual Sciences at Columbia University and Consultant for the Manhattan Hospital in New York.

Dr. J. H. Hagy,

Formerly of Imboden, is now located at Abingdon.

Summer Clinic at Raiford Hospital.

The third and final summer clinic was held at the Raiford Hospital, Franklin, on September 22nd. The following program was presented: The Pneumonias by Dr. H. B. Mulholland, University; Value of X-ray in Diagnosis of Respiratory Infections by Dr. Wright Clarkson, Petersburg; and Lower Right Abdominal Pain by Dr. Kurt Hirsch of the Raiford Hospital.

Approximately 125 physicians attended the three meetings and the series will be sponsored again next summer by the staff of the hospital.

Associated with Parke, Davis and Company.

Dr. Charles F. McKhann, who has for several years been on the faculty of the University of Michigan, has resigned from that institution to accept a position as Assistant to the President of Parke, Davis and Company. Dr. McKhann, who assumed his new duties October 15, will devote his time entirely to the scientific activities of the company.

Dr. McKhann has had an interesting and exceptional background of experience. Since 1930 he has conducted and directed research on communicable diseases, immunology, renal diseases, nutritional diseases, and on certain phases of toxicology. He developed and introduced immune globulin and has contributed to the development of several other products.

Dr. Otto Kastenbaum,

Formerly at Deltaville, is now located for general practice at 1303 Center Avenue, Broad Creek Village, Norfolk.

Dr. T. Jefferson Hughes,

Roanoke, was elected a member of the Board of Governors of the International College of Surgeons at its recent meeting in New York City.

Tropical Medicine.

At the invitation of the Pan American Sanitary Bureau, Dr. Olympio da Fonseca, Jr., medical director for Brazil of E. R. Squibb and Sons Inter-American Corporation, has arrived in the United States for an extensive lecture tour. He is appearing before the faculties and students of medical schools throughout this country, discussing *Tropical Medicine* with special emphasis on malaria, African sleeping sickness, amebic dysentery and ring worm infection.

Dr. da Fonseca is a professor at the National School of Medicine of the University of Brazil and is connected with the Medical Centre of Ceara and the Department of Health of that state. He has attained world-wide renown as a mycologist, both as teacher and as director in this field at the Institute of Manguinhos.

His lecture schedule may be obtained from E. R. Squibb and Sons, 745 Fifth Avenue, New York 22, N. Y.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Alvarez, Walter C.—Nerves, indigestion and pain.
American Dental Association—Index of the periodical dental literature—1939-1941.
Arnett—The story of North Carolina.
Bigger—Textbook of bacteriology. 5th ed.
Bloor—The biochemistry of the fats and related substances.
Breckinridge and Vincent—Child development.
Brock, Samuel, ed.—Injuries of the skull, brain and spinal cord.
Brockbank, E. M.—Mule spinners cancer, epithelioma of the skin in cotton spinners.
Cobb, Stanley—Borderlands of psychiatry.
Coca, Arthur F.—Food-allergy.
Cowdry—Microscopic technique in biology and medicine.
Cummins and Midlo—Finger prints, palms and soles: an introduction to dermatoglyphics.
Cunsumano, Chas. L.—Laugh at the lawyer who cross examines you.
Dodds, Leonard V.—Modern sunlight.
Fernald and Kinsey—Edible wild plants of Eastern North America.
Flugel, John Carl—Psychology of clothes.
Fulton, J. F.—Psysiology of the nervous system. 2nd ed.
Gruenberg, Hans—The genetics of the mouse.
Hrdlicka, Ales—Alaska diary, 1926-31.
Lindbergh, D. O. N.—A manual of pulmonary tuberculosis and an atlas of thoracic roentgenology.
Livingston, W. K.—Pain mechanism; a physiological interpretation of causalgia.
Luhr, Overton—Physics tells why.
Marie and Rowe—Dental vocabulary. English-Spanish and Spanish-English.
Miller—Textbook of periodontia.
Monsch-Harper—Feeding babies and their families.
Myers, Gustavus—History of bigotry in the United States.

Oman, C. M.—Doctors aweigh.
Panum, Peter Ludwig—Observations made during the epidemic of measles on the Faroe Islands in 1846.
Papers of C. V. Chapin.
Pharmaceutical Recipe Book. 3rd ed.
Rogers, Walter P.—Andrew D. White and modern university.

Another Army Hospital Dedicated.

The Ashford General Hospital, White Sulphur Springs, W. Va., was dedicated on October the 16th, in the presence of Surgeon General Norman T. Kirk, Colonel Clyde M. Beck, commanding officer, and members of his staff and invited guests. The garrison flag was presented by Mrs. Arthur Kelly Evans of Hot Springs. Colonel Beck and his staff entertained the guests at the recreation center after the ceremonies.

This hospital, formerly The Greenbrier Hotel, is named in honor of Bailey K. Ashford, Colonel, Medical Corps, U. S. Army, administrator, writer and distinguished authority in the fields of preventive medicine and tropical diseases.

For Sale—

A General Electric X-ray Machine, guaranteed in good order. Address Dr. J. W. D. Haynes, Mathews, Va. (*Adv.*)

Obituaries

Dr. Wright Clarkson,

Petersburg, prominent physician of Southside Virginia, died at Garfield Memorial Hospital, Washington, on October the 17th, from complications following pneumonia. He was a native of Essex County and fifty-three years of age. Dr. Clarkson graduated from the Medical College of Virginia in 1912 and served an internship at St. Elizabeth's Hospital Richmond. After a short time in private practice he saw service overseas in World War I, after which he took up special work in radiology in New York City. He had been engaged in x-ray work in Petersburg since 1921 and had taken an active part in the professional and civic life of that place.

Dr. Clarkson was a moving spirit in the Fourth District and Southside Virginia Medical Society, a former councilor and chairman of the Legislative Committee of the Medical Society of Virginia, and represented this Society in the House of Delegates of the American Medical Association. He opened the first free cancer clinic in the State. As an outgrowth of that, the Virginia Cancer Foundation was formed in 1934 and he was the first director.

He is survived by his wife, a son, and several sisters.

Resolutions on Dr. Monroe.

These resolutions of the Manchester Medical Society are in loving memory of Dr. Archie Clay Monroe, who answered the final call of his Lord and Master on May 21, 1943, at his home on Belleau Road, Richmond, Virginia.

We feel it is impossible to adequately express the love, esteem, and admiration of the members of this Society. In the death of this well known physician the medical profession, and laity of the City and State have suffered a great loss.

Archie Clay Monroe was born in Fauquier County, Virginia, June 2, 1883. After completion of his premedical education, he entered the University College of Medicine, which later merged with the Medical College of Virginia, and there graduated in 1907. Returning to Fauquier County, he practiced there for two years, after which he moved to Caroline County, where he practiced for twelve years. In 1921 he came to Richmond and practiced until 1943, the year of his death.

He was a general practitioner who through his congenial manner, good humor, and great skill quickly won the love and respect of other members of his profession, and of the great host of his patients and friends. He was clever in the art of spreading good humor and optimism among those around him, which was a most valuable addition to his professional skill in the sick room. He distinguished himself in his profession, and his patients will feel the irreparable loss keenly for a long time.

He was a member of the American Medical Association, the Southern Medical Association, the Medical Society of Virginia, the Richmond Academy of Medicine, and the Manchester Medical Society. He was a Mason and a member of the Church of the Good Shepherd, where he served as vestryman for twenty years.

He was married to Rae Smith, who survives him together with his two daughters, Harriet and Rebecca.

He will be sorely missed in our Society, where he always contributed, not only scientific knowledge, but an abundance of friendliness and good cheer. It is with sincere sorrow that we pay this last tribute to our fellow member of the Manchester Medical Society.

Your committee moves that these resolutions be spread on the minutes of the Society, a copy be sent to the family of the deceased, and a copy sent to the VIRGINIA MEDICAL MONTHLY.

Signed:
TURNER S. SHELTON
GEORGE R. MALONEY
PHILIP JONES, *Chairman.*

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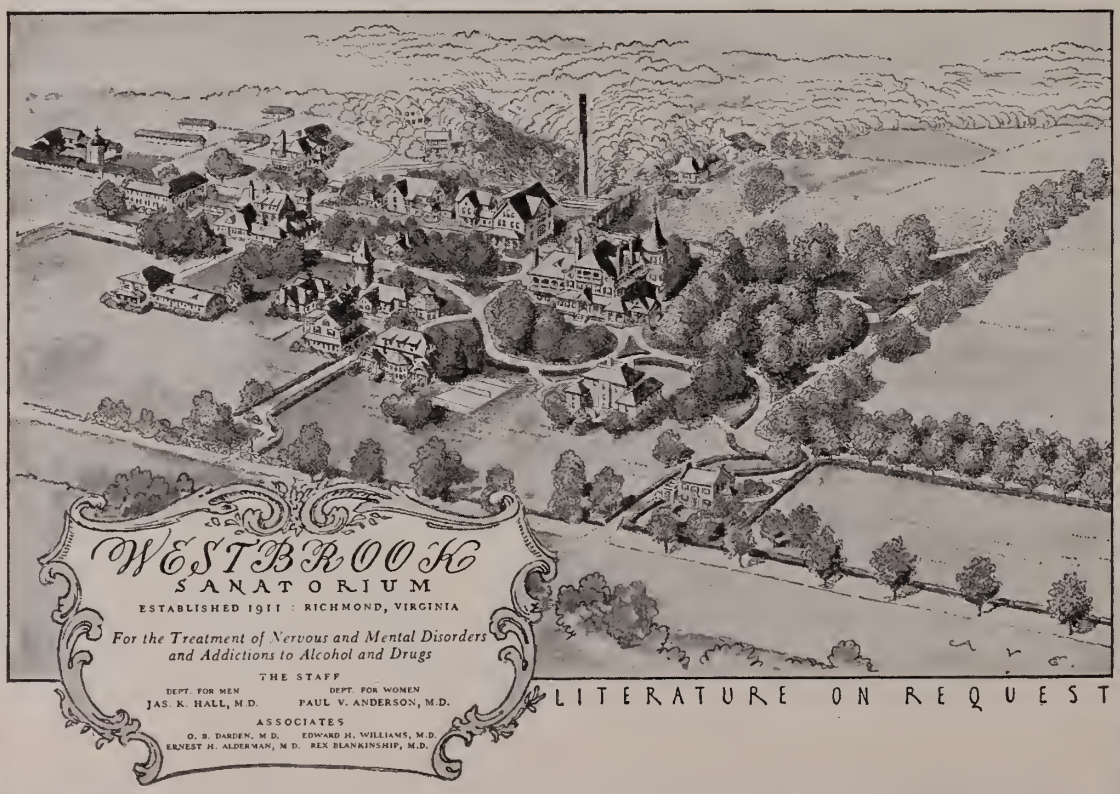

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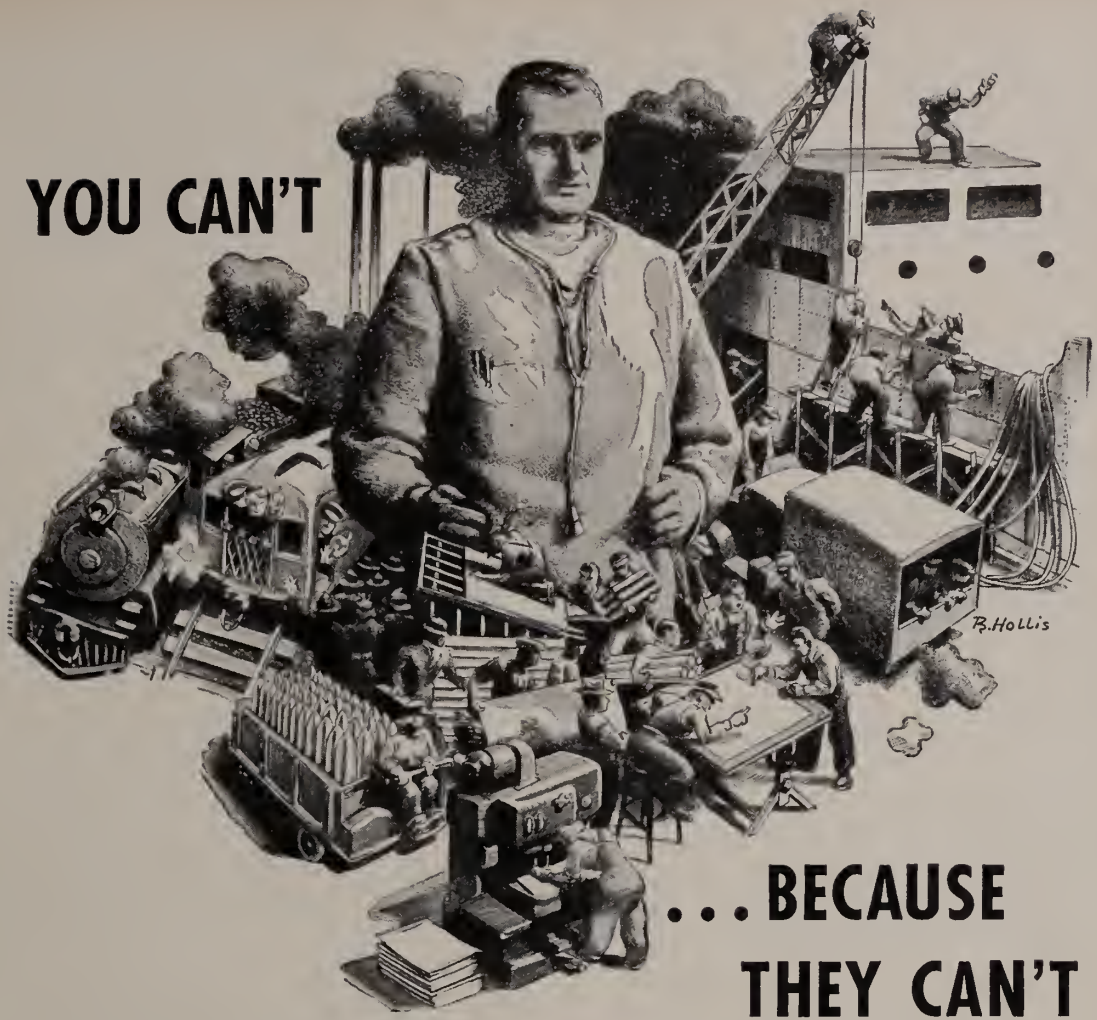

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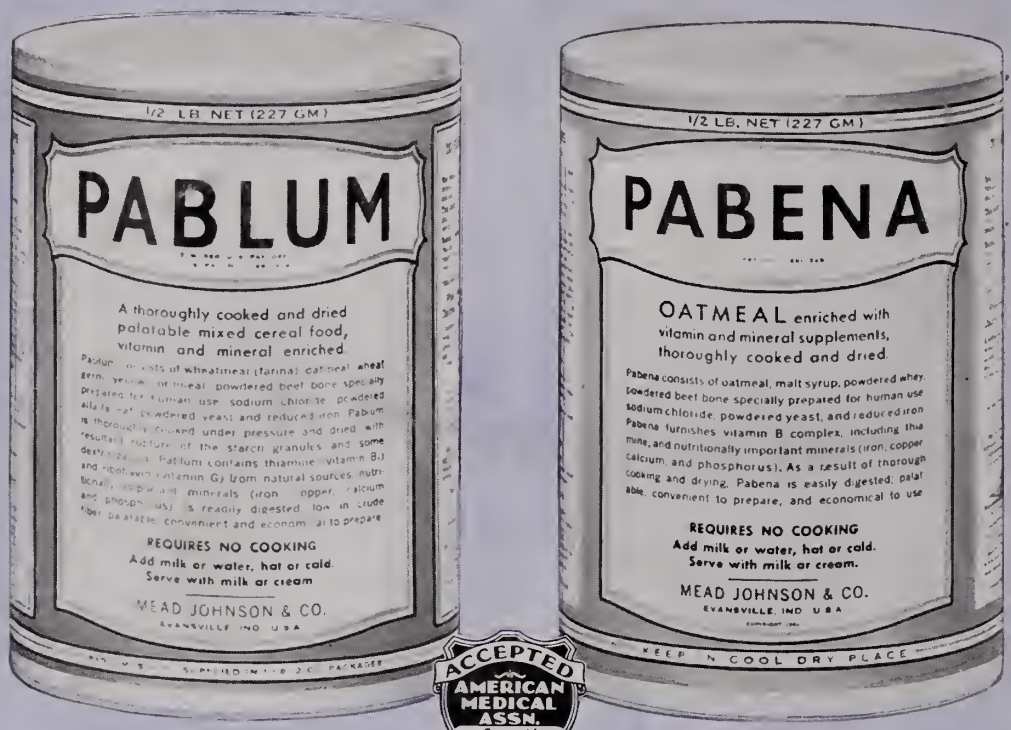

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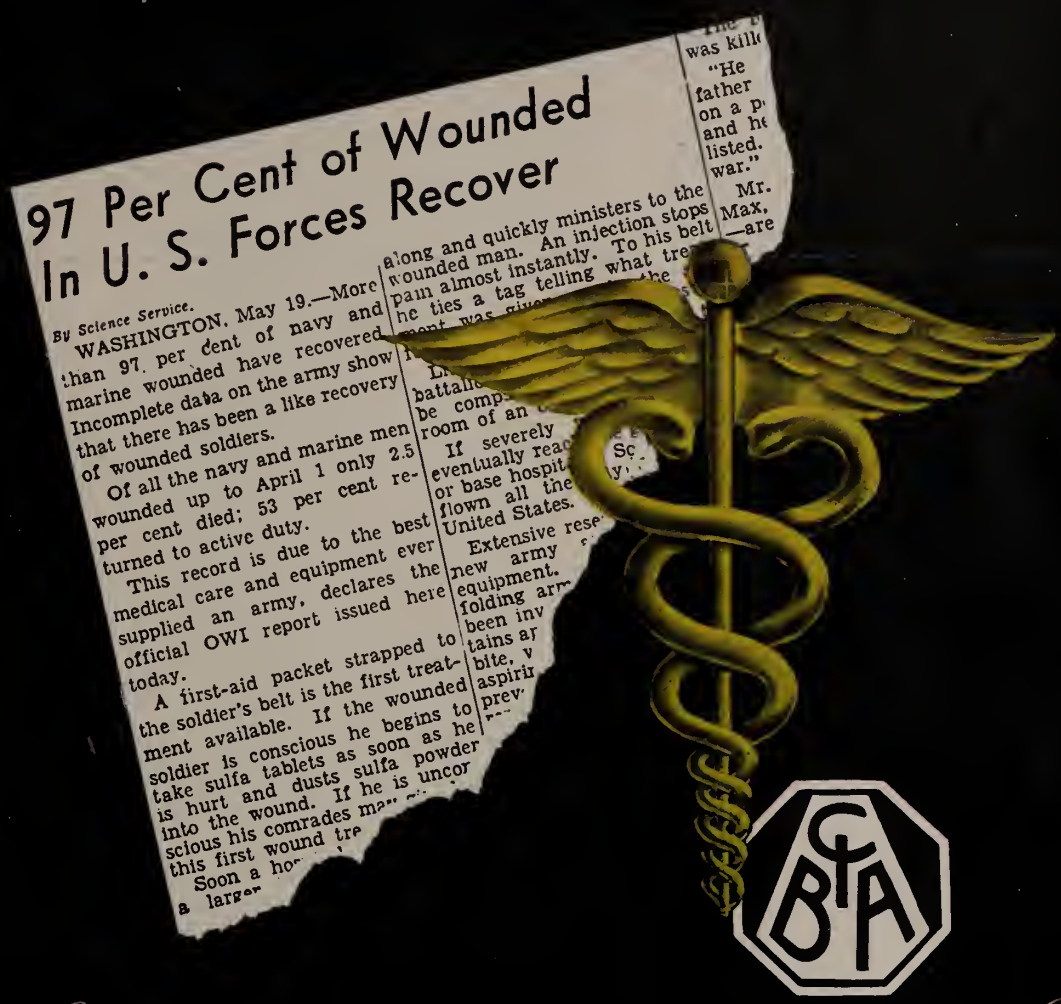

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Guest Editorial

Standing Orders for Nurses in Industry

A RECENT report of the Council on Industrial Health of the American Medical Association calls attention to the fact that both the medical and nursing professions have long been concerned about the employment of nurses in industry without adequate medical supervision. The Council has therefore formulated "Standing Orders for Nurses in Industry", which can be adapted as necessity dictates to meet the special needs of industrial manufacturing plants or other industrial or mercantile concerns.

The following quotation is from the first page of the reprint:

> Standing orders represent a preliminary understanding between physician and assisting personnel about routine conduct of a medical service. In establishing such orders in an industrial medical department, several considerations need to be borne in mind:
>
> 1. The greater the amount of personal supervision exercised by the physician directly in the industrial environment, the better is the industrial health service.
> 2. Standing orders cannot be written to meet every situation likely to arise in industry. They must be modified to meet specific requirements and in accordance with the training and professional competence of the assisting personnel. They should be signed by the supervising medical authority and posted prominently in the medical department.
> 3. The nurse in industry should assume no responsibility for service outside the field of her professional training. This applies particularly to individual case management, from which the nurse should rigidly abstain except:
> (a) In emergencies demanding immediate independent judgment and action.
> (b) Procedures of preliminary or first aid nature routinely required by reason of the nature of the work and which are clearly stipulated in the standing orders.

Nurses will continue to be engaged by industrial managers directly as long as they feel that an adequate medical service cannot be supported by small or medium sized plants. It becomes, then, the function of county or state medical society committees on industrial health to be as helpful as possible to industrial nurses in the exercise of their functions and to provide them with such advice and encouragement as may be necessary until direct medical responsibility can be set up. Under any circumstances, it is safe to say that any industrial medical service will be valuable in direct proportion to the interest expressed in it by competent ethical physicians.

C. M. PETERSON, M.D., *Secretary,*
Council on Industrial Health,
American Medical Association.

Editor's Note: Reprints of the 12-page report may be secured from the Council on Industrial Health, American Medical Association, 535 North Dearborn Street, Chicago 10, Illinois. Single copies free, special rates for larger quantities.

MEDICAL OPERATIONS IN THE PACIFIC THEATRES*

CHARLES C. HILLMAN, BRIGADIER GENERAL, M.C., U. S. ARMY,
Office of the Surgeon General,
Washington, D. C.

In this world wide struggle in which we are now engaged each theatre of combat has features that give it a character different from all others. Climate, terrain, expanse, indigenous populations, economic conditions, transportation facilities,—all have their influence on military operations. Nowhere is this more clearly exemplified than in the South Pacific and Southwest Pacific Theatres.

Though these are separate areas for tactical purposes, strategically they have the common objective of destroying units of the Japanese army and wresting from them bases from which we may launch further attacks. For the purposes of this discussion they may be considered as a single theatre, including Australia and New Zealand and the islands generally to the northward.

The immensity of this region is comprehended by few of us. Translated to nearer and more familiar geographical locations, it is equivalent to an area roughly defined by Boston on the north, Panama on the south, San Francisco on the west, and the middle of the Atlantic Ocean on the east. Australia is approximately the size of the United States with Melbourne in the southeast and Darwin in the north having relationships comparable to New Orleans, Louisiana, and Edmonton, Alberta. The island of New Guinea is longer than the distance from Philadelphia to Kansas City.

Just as striking a feature as the great distances involved, in inverse ratio, is the small population. Australia, notwithstanding its size, has scarcely seven million inhabitants and New Zealand has well under two million. Otherwise, the area is populated largely by Melanesians, wearing grass skirts or loin cloths, only recently and not too certainly removed from cannibalism, with little productive capacity, and less inherent interest in the survival either of Japanese imperialism or democratic institutions.

Transportation is largely by water and by air. Only along the eastern coast of Australia are strategically located railroads available, and then their efficiency is greatly impaired by the differences in gauge which largely preclude the use of engines and rolling stock of one territory on the tracks of another.

In Australia and New Zealand high proportions of the male populations have been absorbed by the military forces. Agricultural and manufacturing activities have been reduced to the minimum. Only the most essential articles of trade are available and they in very limited quantities. This has its effect on our logistical plans in that much of the food stuffs which we would like to purchase locally must in large part be transported from the United States. Building materials and labor to fabricate them are scarce and the construction of storehouses, barracks, and hospitals correspondingly difficult.

Fortunately, the attitude of both the Australians and New Zealanders toward our American forces has been most friendly. There is every indication that we are welcome. Though food stuffs, construction materials, labor, and manufactured articles are scarce, they are being furnished to the full extent of local capacities. Colleges, boarding schools, and sections of their hospitals have been turned over to us for hospital purposes. In fact, the largest and most modern hospital in that whole region, completed just after the arrival of American troops in Australia, has been transferred in its entirety to the Medical Department of the United States Army. Even the half naked, woolly haired Melanesian islander shows no resentment at our presence. Though he can have nothing but wonderment over what the big fracas is all about, a little food, some trading tobacco, and a surprisingly small monetary stipend makes of him a willing worker. He is accustomed to vigorous physical activity and the assistance that he has rendered in stevedoring, road building, and carrying the wounded over difficult trails from the battlefield has been extremely valuable. There is the disadvantage, however, that the native aborigine is almost always a carrier of malaria, intestinal parasites, and other tropical infections and his proximity constitutes a hazard so far as health of troops is concerned.

As one would anticipate in so vast a territory the climate varies within wide limits. However, the

*Read by invitation at the annual meeting of the Medical Society of Virginia in Roanoke, October 25-27, 1943.

combat areas are all deeply within the tropics. Though high temperatures such as those in Northern Africa and the Middle East do not prevail, it never becomes cool. The continuous monotony of tropical rains, excessive humidity, mosquitoes, flies, ants, and other insects render the advanced areas anything but regions of desirable residence. Much of Australia and all of New Zealand enjoy a temperate climate. The terrain is well adapted to training troops and many excellent beach and other locations for rest and convalescent camps are found.

Medical installations in the forward areas are necessarily located in the jungle rather than in otherwise much more desirable open upland positions. Each hospital has its slit trenches or other means of providing protection for its patients and personnel. On Guadalcanal bombings are so frequent that it has been found necessary routinely to place non-ambulatory patients on litters and carry them into underground shelters for the night.

Diseases endemic in this country are found in the Southwest Pacific, but because of the outdoor life and comparative freedom from crowding they have caused little concern. Infections peculiar to tropical and sub-tropical regions and psychoneurotic conditions have been the most important causes of non-effectiveness.

Military service, especially in overseas theatres, tends to bring out potential emotional deficiencies. Experience in this theatre has proved to be no exception to the rule. Notwithstanding much more careful selection of inductees than that practiced in World War I and intensive efforts to eliminate the emotionally weak among trainees at replacement training camps, psychoneuroses have constituted a major cause of non-effectiveness in this theatre. Distance from home, general absence of facilities for recreation outside of the military, the discomforts of tropical climate and the rigors of combat, appear to be the principal factors. Fortunately, recovery is the rule with removal from the precipitating influences.

Fear reactions, mutism, tremors, exhaustion states, and other acute psychoneuroses have occurred during combat. Here, as in other theatres, prompt sedation, rest, and adequate nourishment have been most effective in the relief of symptoms and the early return of such cases to their units.

Among tropical infections malaria stands out as the arch enemy. Except in our southern states malaria has been a problem of little importance to the medical practitioners of this country. It is natural that its place in the present war has not been correctly gauged by the average medical officer serving in the continental United States. Actually there is no disease today which is so vitally affecting our war effort as malaria. It has produced much more ineffectiveness and many more hospital admissions in some theatres than have battle casualties. As a means of speeding up our fight against the Japanese, malaria control is actually far more important than any other aspect of medicine or surgery.

Malaria in the Pacific areas is a problem chiefly concerned with New Guinea, Guadalcanal, New Georgia and other islands in Northern Melanesia. Here the disease is hyperendemic. During a recent visit to this region I took advantage of the opportunity to examine many native children. It was found that 75 to 90 per cent showed definitely palpable spleens.

The chief malaria vector here is Anopheles punctulatus, variety moluccensis. This mosquito breeds naturally in small streams and ponds but it readily adapts itself to man-made collections of water, such as roadside barrow pits, truck ruts, drains from shower baths, tent walls rolled up outwardly and even the tops of oil drums. It is an avid feeder and will bite even in the daytime in dark damp jungle and in coconut groves. An indication of the intensity of transmission may be had from the fact that in one hyperendemic area where carefully controlled observations were carried out there were 17 clinical cases of malaria in 41 days in a group of 50 soldiers protected only by bed nets. None of these men had ever had malaria before.

The Medical Department has developed a well rounded program of control. The newest advances in insecticides and repellants have been made available in practical forms. Steps have been taken to assure the manufacture of adequate supplies of atabrine. Educational material has been prepared for distribution and no opportunity has been lost to press home the dangers of the disease if uncontrolled.

Medical Department officers, whatever their primary duties, have a very special responsibility in this campaign against malaria. They should take an active part in developing malaria consciousness

and malaria discipline among troops. The individual soldier must be so conditioned that he will use his antimosquito weapons as automatically and efficiently as he uses other weapons. Such indoctrination must start in the continental United States and be continued overseas. Line and staff officers, especially those in command positions, must be effectively advised of the need and methods for protecting troops against the ravages of malaria. This will help to obtain that forthright and intelligent command action which is required to develop high malaria discipline. It should be kept foremost in mind that the key to the control of the disease in forward areas lies in those two words, malaria discipline.

Turning to the clinical features of the disease, it is encouraging to find that the death rate has been unusually low, approximately one in 1,500 admissions. In line with all previous experience and notwithstanding the best therapy that has so far been devised, recurrences have been frequent. One or more subsequent attacks have followed the initial appearance of the disease in approximately 40 per cent of the cases. Vivax infections, here as in other regions of the world, have shown a much higher recurrence rate than infections with Plasmodium falciparum. Atabrine and quinine, properly administered, appear to be equally efficacious in clearing up the usual acute manifestations of the disease and in preventing recurrences. For the occasional severe case with cerebral or other complications quinine has the advantage that it can, and should be administered intravenously.

The high recurrence rate after previous, presumably adequately treated, attacks of malaria is a challenge to the therapist in tropical infections. Much work is being done toward developing improved antimalarial drugs. Field experiments are being conducted to test the value of these new products and to develop more effective administration of those we already have. It is predicted that out of these efforts will come improvements of inestimable value in the therapy of malaria.

Of much less importance than malaria, but still a disease for which we must blame the mosquito, is dengue. It has appeared with typical clinical and epidemiological characteristics in Northern Australia, New Guinea, the Solomon Islands, and other islands of Melanesia. It has been the cause of considerable suffering and non-effectiveness on the part of military personnel operating there. Fortunately, the disease is never fatal. Its prevention lies entirely in the elimination of mosquito breeding and avoidance of their bites.

A few cases of filariasis have been reported but in cases returned with that diagnoses to the States, filaria have not been found.

Among tropical diseases skin infections rank next to malaria as a cause of non-effectiveness in Pacific theatres. Though etiologically similar in most cases to skin infections in temperate climates, their incidence, extent, and severity are much greater because of the increased humidity, excessive perspiration, frequent wetting of the feet, and imperfect laundry facilities.

Dysentery, chiefly bacillary, has been encountered. Except early in the New Guinea and Guadalcanal campaigns, it has not constituted a serious problem. Bacillary infections have usually been mild in character and have responded promptly to rest in bed, appropriate diet and sulfa drugs, usually sulfaguanidine. Some small outbreaks have been attributable to carriers working in messes. More widespread epidemics have been due practically always to poor sanitation. In such instances the condition has cleared up with the institution of corrective sanitary measures.

Tsutsugamushi, or scrub typhus, has occurred in troops in Northern Australia and New Guinea. Its incidence has been comparatively low, but it assumes importance because of a death rate of approximately 5 per cent. The disease in general has the clinical characteristics that we usually associate with louse borne typhus. An interesting and quite frequent finding is a small ulcer on the thigh or lower abdomen where the infected mite penetrates the skin. Careful nursing, generous administration of fluids by mouth or parenterally, and a strict bed regime, continued for at least two weeks after subsidence of the acute manifestations, are the therapeutic indications. The latter is predicated on the basis of leukocytic infiltration of the myocardium at autopsy and the fact that death from acute cardiac failure has occasionally resulted from early physical exertion. Because of this it has become the practice usually to treat the patient where the diagnosis is made and not transfer him to another hospital though it may offer better clinical facilities.

The ordinary typhus vaccine offers no protection. Aside from using insect repellants, clearing away vegetation and avoiding areas of tropical growth likely to harbor the mite vector, no specific measures are known to prevent the infection or to influence the course of the disease.

Neither plague nor cholera has yet been encountered among American troops in this region.

Venereal disease has not been a serious problem. In Australia and New Zealand the rates are comparable to those in the continental United States. In the advanced areas there are few venereal infections. There are no white women and it appears that so far as American soldiers are concerned, the grass-skirted "fuzzy-wuzzy" has little sex appeal.

Experience with battle wounds has been much more favorable than in previous wars. Surgical shock has been combated more successfully than heretofore. Serious wound infections have been infrequent; post-operative pulmonary complications rare. The early administration of morphine and barbiturates to relieve pain and anxiety, the employment in a large percentage of cases of intravenous sodium pentothal anesthesia, the free use of plasma and whole blood transfusions, the early prophylactic administration of sulfonamides, and a generally high standard of surgical technique have been determining factors in this favorable experience.

Medical supplies have always been available in ample amounts. Fortunately there was set up early in the current emergency a mechanism by which overseas units were accompanied by the necessary drugs, dressings, and professional equipment to provide efficient medical service.

During combat, evacuation of casualties from the field, and later to the communications zone, has constituted a major problem. Most of the fighting has occurred at points where the orthodox evacuation scheme is impracticable. Because of swamp, jungle, or rough terrain use of the standard Army ambulance has rarely been possible. Because of their peculiar ability to keep going under all conditions, the jeep fitted with frames to hold two or three litter patients has frequently served as a substitute. Wounded men have been floated down jungle streams on pneumatic life rafts. In most instances, however, primary evacuation has been accomplished by hand carried litter. It is at this point that the native carrier, accustomed to carrying packs long distances through slippery jungle, has proved invaluable. Secondary evacuation has been effected largely by air. To permit the operation of combat planes and to provide for the landing of airborne troops and critical supplies, the early establishment of airfields is imperative. Returning empty cargo planes fitted with seats and with brackets to support the standard field litter then serve as air ambulances. Medical officers, nurses, and enlisted personnel, especially trained to care for the sick and wounded during air transit, are provided according to the requirements. Once aboard a plane, the casualty is removed quickly to a fixed hospital well beyond the danger zone. The accompanying improvement in morale is believed to be a potent factor in the more rapid recovery of the patient.

Steamship evacuation of the sick and wounded has presented certain hazards. While in that area, I had an opportunity to note the scars still visible on one Australian hospital ship hit squarely by an aerial bomb several months before, now repaired and again in service; and during my visit a similar ship was sunk by a torpedo with the loss of several hundred lives. Both ships were painted white with large red crosses on the tops and sides and were brilliantly illuminated when struck.

In summary, we may say that the American Forces in the Pacific Theatres are operating over a vast and largely undeveloped tropical territory, with almost no pre-existing means of communication; that the Medical Department is meeting many new problems in preventive medicine, treatment of the sick, and evacuation of the wounded; that malaria constitutes the greatest cause of non-effectiveness among military personnel, and that in its control the indoctrination of line officers and the development of malaria discipline are all important; and, finally, that results in the treatment of battle casualties have been favorable beyond expectation.

LOW BACKACHE FROM THE VIEWPOINT OF THE GYNECOLOGIST

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"Woman is a constipated biped with a pain in the back."

Forgiveness is begged for repeating this old saw. Yet the very existence of this saying attests the frequency of backache among female adult human beings.

The high incidence of backache among women is well recognized by the laity and by the medical profession. There are among both groups those who attribute this symptom largely to the female organs.

REVIEW OF THE LITERATURE

There is a large literature on low backache, most of it written from the orthopedic viewpoint. The pertinent literature of recent years and some of older years, written from the gynecological viewpoint, was studied. This study showed a widely divergent opinion as regards the rôle played by the gynecological lesions in the production of low backache. Much of the writing is uncritical, not apparently based on scientific study. Most of it deals with the writers' personal impressions.

There is a careful analysis of a series of cases reported by Lynch in 1926. He points out that when gynecology first developed as a specialty it was believed that gynecologic conditions were the chief cause of backache in women. Then the pendulum swung and gynecologists became much more conservative in this regard. Lynch, however, was impressed with the importance of gynecological conditions in the causation of backache. As the result of a preoperative and follow-up study of 1041 gynecological cases operated upon he reached the following conclusions:

Low backache was a complaint in 49 per cent of all of these cases. It was a complaint in 15 per cent of the 28 ovarian tumors in the series; in 34 per cent of 101 fibroids; in 49 per cent of 434 cases of pelvic inflammatory disease; in 61 per cent of 290 retrodisplacements, most of which were combined with prolapse, cervical injuries, and vaginal relaxations; in 71 per cent of 125 marked vaginal relaxations in women under forty; and in 22 per cent of 63 cases of complete prolapse. Backache was cured in 76.5 per cent of the cases in which the symptom was present preoperatively. The cures of backache were divided as follows: Ovarian tumors, 50 per cent cured; chronic inflammation, 72 per cent cured; relaxed vaginal outlets in women under forty, 79 per cent cured; fibroids, 80 per cent cured; retrodisplacements, 81 per cent cured; and complete prolapse, 37 per cent cured. He believed that the backache in these cases was due chiefly to congestion.

Richardson made an intensive study of this subject and reached in 1918 the conclusion that the actual cause of the backache was chronic strain of the lumbosacral and sacroiliac articulations, brought about by faulty posture often assumed in an attempt to relieve intrapelvic pain. He states that no matter how skillfully operative therapy is executed it will often fail to relieve the backache unless supplemented by orthopedic measures. Kelly is quoted by Miller and Kretzschmar as stating that experience had taught him that backache was not often directly dependent upon any pelvic disease though it was a common concomitant. Ward stated that gynecological backache was usually sacral, although the lumbar and the coccygeal regions may be involved. In approximately 85 per cent of gynecological patients complaining of backache the backache was due to gynecological pelvic disease. In the remaining 15 per cent the cause was orthopedic or non-surgical. Backache is a prominent symptom in approximately 50 per cent of all gynecological cases. Pelvic congestion was the most frequent cause, as, for example, by retrodisplacements. Traction on the ligaments and supports of the pelvic organs also produces backache. Pressure on nerves by pelvic masses is another factor in backache.

Miller and Kretzschmar state that the back itself and the pelvic organs are directly or indirectly responsible for 80 to 90 per cent of all cases of backache and that this symptom is perhaps the most common complaint met with in female patients. As regards retrodisplacements, they make this significant report: At the University of Michigan Hospital from

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1901 to 1925, 21 per cent of all patients seen with retroversion were operated upon. From 1925 to 1928, only 11 per cent were operated upon. In 1929, 1930, and 1931, only 4.7 per cent, 1.8 per cent, and 0.9 per cent, respectively, of the cases seen were operated upon. They felt that a cause and effect relationship between retroversion and backache was not the rule. In regard to a relaxed pelvic floor they believe that the symptom of backache, when present, is usually less pronounced than general fatigue and symptoms referable to the bladder and rectum. The gynecologist is rarely justified in promising relief from backache by pelvic floor repair alone. Pelvic inflammation, resulting in congestion and cellulitis, is probably capable of producing backache, but here again the backache in most cases is of lesser importance than other symptoms associated with the inflammation. Clinical evidence would indicate, they state, that severe infection of the cervix associated with pelvic lymphadenitis may be responsible for backache. Pelvic neoplasms may produce backache by means of congestion, pressure, nerve or bone involvement, or by causing postural changes. They hold that in the absence of other symptoms a tumor is unlikely to be the cause of backache.

Kosmak points out that the lithotomy position on an operating table sometimes adds a backache of traumatic origin. Mussey and Wilson in 1941 made this statement in a paper on pelvic pain: "Comparatively few patients with backache were subjected to surgical operation. This is a reversal, now generally accepted, of the formerly prevalent opinion that backache is almost always a symptom of pelvic disease."

Graves stated that backache above the lower lumbar or sacral regions was not gynecological in origin. The most important gynecological cause of backache is malposition of the uterus. 76 per cent of 500 cases of retrodisplacements studied at the Free Hospital for Women in Brookline complained of low backache. 85 per cent of these were cured or greatly relieved, presumably by operation. In patients with essential dysmenorrhea and retroflexion the pain was usually in the back instead of in front. He stated that patients with simple retroversion without prolapse who complained of backache as their only symptom should first be referred to an orthopedist. However, if the retroversion was associated with prolapse and relaxation, operation should be done whether or not the backache was orthopedic in origin.

Collins states that backache is probably the most common complaint that sends women to the physician for a pelvic examination. However, only in about one-third of the cases is the backache caused by pelvic disease. He lists the causes as congestion and inflammation, pressure, and pulling. He stresses the importance of a careful history and physical examination, and warns to beware of the congenital type of retroversion. Cary, under the subject of the gynecological aspect of low back pain, writes chiefly about orthopedic conditions. Dicks states that moderate relaxation is more usually a cause of backache than complete prolapse. Incidentally, this somewhat paradoxical fact has been noted by several writers. Sixty-eight of 100 gynecological cases he studied had backache. He has relieved patients by proper gynecological treatment who obtained no relief from orthopedists.

Mengert states that backache as a symptom of gynecological disease is generally produced by pressure or traction on, or induration and infiltration of, the pelvic cellular tissues and peritoneum. He lists specific gynecological lesions which may cause backache and summarizes: "certain definite and easily recognizable pelvic diseases cause backache which, however, is seldom the major and never the only symptom of the condition. Minor degrees of pelvic disease do not cause backache. The cause of most of the backaches in women will most likely be found elsewhere than in the pelvis."

Shafiroff and Sava studied on a gynecological service 63 cases whose first complaint was low back pain. In regard to pathogenesis 17 per cent were gynecologic, 68 per cent were orthopedic, 6 per cent urologic, and 7 per cent medical. They make the statement that "in the gynecologic backache the referred pain is anterior and seems to be due to pressure on the ilio-hypogastric, ilio-inguinal, or femoral nerves." To me this is hard to understand from an anatomical viewpoint. Nowhere in their courses do the first two nerves or their parent trunk, the first lumbar nerve, enter the pelvis; and the femoral nerve is distributed exclusively to the lower extremity. Raddin found backache due to cervicitis in 98 per cent of his cases. Tampons cured 95 per cent of these. Lamb regards malposition of the

uterus and dysfunctions of the ovaries as important causes of backaches and headaches. Sure lists gynecological cases of backache.

Klebe states that backache was noted in several cases of primary syphilis of the portio vaginalis. He attributes this pain to secondary involvement of retroperitoneal lymph glands. Bauer notes the well known fact that many severe gynecological diseases are not associated with backache. He mentions coitus interruptus as one cause of backache. Schroder believes it is questionable whether it is permissible to attribute backache to nonadherent retroflexion of the uterus. According to Pelle, backache and cervicitis may be due to an extension of the infection by the lymphatics to the perirenal fat.

Davis states that in spasmodic dysmenorrhea the pain often radiates to the vagina, rectum, thighs, or sacrum. In congestive dysmenorrhea the aching is distributed over the whole of the lower abdominal, lumbar, and sacral regions.

Discussion From Anatomical Aspect

It is generally thought that the pain from visceral disease is referred along somatic nerves which arise from the cord at the level at which the visceral sensory nerves enter. Therefore, painful stimuli from the female internal genitalia would be referred over the area of distribution of the tenth thoracic to the first lumbar nerves (See Reynolds, Kuntz, Cleland, Labate). Anteriorly, this would be from and including the level of the umbilicus to the inguinal and pubic regions. It is actually over such an area that one finds predominantly the painful symptoms of gynecological disease.

At first thought, considering that there is apparently no sensory connection between the lower lumbar and sacral nerves on the one hand and the uterus and ovaries on the other, one would say that there could be no *low* back pain from purely intrinsic lesions of these organs. However, further investigation will disclose that anatomically some low backache is possible, at least in the lower lumbar and gluteal regions and at the lumbo-sacral junction. This is because the cutaneous branches of the posterior division of the thoracic and lumbar nerves descend for a considerable distance before reaching the skin (Johnston). The twelfth thoracic nerve reaches almost the level of the iliac crest, and the first lumbar nerve reaches an even lower level, passing over the crest to the gluteal region (See Fig.). The sacral region is supplied for the most part by the sacral nerves, and where so supplied would not be the site of referred pain from the female internal genitalia.

An exception to the latter statement, however, would exist in cases where the anterior sacral nerves would be involved either by pressure or by an extension of the pathological process beyond the confines of the internal genital organs themselves. In such cases an anatomical explanation of sacral pain would be apparent. For example, in this way sacral

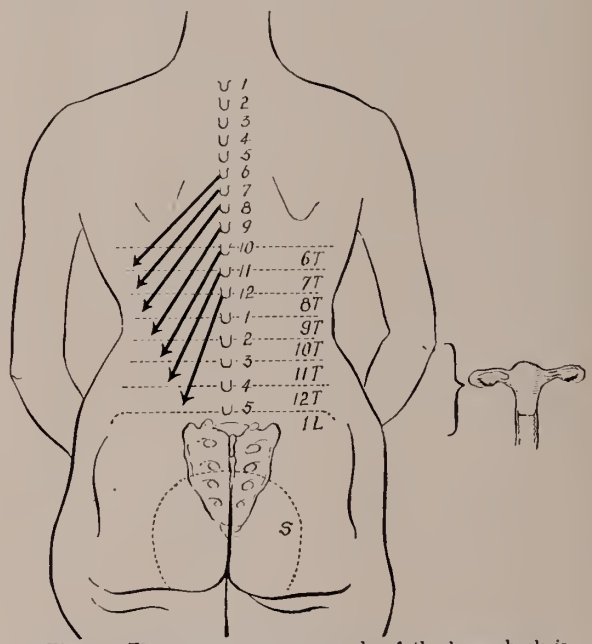

Figure.—The cutaneous nerve supply of the lower back is shown in a simplified diagramatic manner. Actually the arrangement is not as regular as this. The diagram illustrates how the spinal nerves descend a considerable distance after leaving the spinal canal before reaching the skin.

backache in extra-organic pelvic congestion could be anatomically explained, for presumably the pelvic parietes have a sacral sensory supply. Also, in an inflammatory or neoplastic invasive process involving the anterior sacral nerves, sacral pain would seem reasonable. Such processes outside of the genital organs could and do involve certain of the nerves to the lower extremity, causing pain in this appendage.

General Discussion

Admittedly, backache is a common complaint in woman. It does not follow that the immediate cause of her backache lies in the organs peculiar to her sex. Such *post hoc ergo propter hoc* reasoning is fallacious. From the foregoing discussion it is ap-

parent that opposing conclusions have been reached by those who have investigated this subject. The writer is not aware that any investigative work on gynecologic backache has been made at the Medical College of Virginia. At this institution it is observed that the majority of gynecologic patients seen do not speak of backache unless specifically asked about it. An affirmative answer is often or usually forthcoming if the existence of backache is questioned. However, only rarely is this symptom the dominant one. When it is, one hesitates to attribute its cause to gynecologic disease. Nevertheless, it is believed that every woman complaining of backache should have a gynecological examination. When backache is the only complaint, one is all the more skeptical of the gynecologic factor. Rarely, if at all, is a patient operated upon gynecologically for the sole relief of backache, and, incidentally, operations for uncomplicated retrodisplacements are rarely performed.

It is believed that the postural and other orthopedic aspects of backache are more important than the gynecologic. In other words, so far as backache is concerned, it is believed that the fact that woman is a biped is more important than is her organic femininity, or her constipation. Unquestionably some of her orthopedic backache is related to her childbearing functions, but therapeusis should not aim at castration! Besides gynecologic and orthopedic factors, neurologic, urologic, and medical ones must too be considered.

CONCLUSIONS

1. Backache is a frequent complaint of gynecologic patients; it is usually less severe than concomitant symptoms, and it is rarely the only complaint.
2. Opinions in the literature as to the gynecologic etiology of backache are widely divergent; yet there seems to be a trend towards conservatism.
3. Anatomically, lower lumbar and upper sacral pain referred from intrinsic lesions of the female internal genitalia is understandable, as is sacral pain from extension of pathologic processes beyond these organs.
4. A woman with backache should have a gynecological investigation (non-surgical), though usually the cause will not be found to be due to organic gynecologic disease.

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THE PROBLEM OF THE MILITARY REJECTS AND CASUALTIES*

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War conditions bring into the light many uncomfortable states of mind that were previously overlooked because the man in question was getting along reasonably well, and those who had most to do with him were used to him. War conditions bring to the attention of the community and perhaps saddle on to the community mental problems that previously were recognized but were being taken care of by the individual or the family involved. War conditions cause a considerable number of abnormal mental states. Perhaps many of these abnormal states would have developed at the same time or at a later time under other stresses than that of war, but no one can prove it. When abnormal mental states are caused by war, the Government or one of its subdivisions has the legal as well as the moral responsibility of doing something for the patient. This something may be a long period of hospital treatment and a measure of supervision whenever the patient leaves the hospital. Much more likely, however, is a series of measures—or therapies, if you will—applied promptly and vigorously so as to get the patient back to usefulness and keep him employed. It is not difficult to put into relatively few words the essence of the measures that are needed, but those of you who have been working in this field have already a broader and more detailed experience than could be summarized in this paper. My function is to outline the problem in such a way that those who have not been much in contact with these soldiers and ex-soldiers will find it easy to contribute to the discussions something out of their civilian experience. In the discussion that your program committee is encouraging about this important topic, I shall draw on general psychiatric history, on the specific programs of Connecticut and Illinois, and on things that have been told me in various parts of the country. Nothing that I say will seem at all novel to those of you who are working on induction boards or working in mental clinics; those who are engaged in the office practice of psychiatry will recognize every phase of the situation, and those of you who are doing hospital work will recognize many of the problems and have no difficulty in imagining the others. Nurses, social workers, teachers, and persons of leisure who are interested in their fellowmen may be in this convention. These problems involve technical matters of great medical importance, but do not turn from them on that account, because they also involve a great deal of organization in the community so as to make all medical resources available to those who need them and to save the time of the scanty number of physicians by having other persons do for these patients a lot of the things that the physician may specify in a word or two, but that he cannot possibly take his own time to carry out when the demands of practice (whether it be private practice or public practice) are so insistent as they are in these times.

The human material involved in your State is some hundreds of young men. Perhaps a few come to attention who have been rejected by the draft board, but for some months now the authority of the draft board has been very limited in this regard. Many of them have been rejected by the induction board. Others have been taken into the armed forces and have been dismissed in from less than a month up to two or three years after their induction. Some of them are decidedly young, and the reason for their discharge was that somebody found out that they had lied about their age, and had enlisted before they were old enough to do so properly. Enterprising boys like these are not likely to need much psychiatric help, but one can think of such a boy finding it hard to settle down into a routine job and be quiet of an evening. A considerable number of draft rejections and a still larger number of discharges from the armed forces are accompanied by diagnoses that place them definitely in the psychiatric field. Nevertheless they do not all need help, as will be pointed out topic by topic. On the other hand, there is a considerable number of persons rejected for other ostensible reasons, who do belong in our field. Sommer and Weinberg point out that among those who are discharged for the convenience

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of the Government, of those who enlisted fraudulently, of those who have retired, there is doubtless a substantial number of veterans with personality defects, which is probably still more the case with those who go out for inaptitude or undesirable habits or bad conduct or desertion.

In taking up some diagnoses serially, we find, first, a considerable number of psychoses. In Illinois by far the largest list was contributed by schizophrenia. At various places in the country I have seen such cases, and have been told about others. There is no reason to doubt the diagnosis, for Bleuler's "schizophrenia" was expected to include a great many recoverable cases. Our psychiatric observers report a considerable number of catatonic excitements in the armed forces, and these inevitably lead to discharge. Some of the mental processes involved are quite as malignant as anything that fills the wards of our mental hospitals. On the other hand, a great many catatonic excitements pass over, and the patient seems to be as well as ever. Sound public policy would indicate that there should be good opportunity for clinical study and advice, and that there should be excellent social service and employment service awaiting these young men in their own community. The employment service need not be very extensive in these days, but it should be very intelligent, preferably a vocational advisory service. Many of these patients will be well when they get home. Others will need to go to the State hospital. If the State hospitals of Virginia are less well equipped for social service than they should be, you will no doubt make every effort in spite of these difficult times to cancel any such deficiencies.

The kind of service that we advocate probably cannot be extended to all former mental patients. Although the Government gives extensive aid to physically disabled people who want it, not all of them are reached. We believe, however, that a very large number of the mental cases not only can be helped but should be helped in this way. The United States Employment Service is very well disposed in this matter, and has veterans' representatives. The Employment Service is not in position to get psychiatric advice on a considerable scale, and you can imagine that many of our cases that look simple would prove difficult for them to handle by ordinary job placement techniques. According to the Associated Press they are already doing what they can. Miss Beatrice Wade tells us that experiment proved that a group of former mental patients, when given vocational guidance, help in getting work and a chance to learn a new trade, showed less tendency to relapse. This is what we would expect, but few have had an opportunity to make the experiment.

In spite of able and well directed effort on the part of many examiners serving the draft boards under the old arrangement and working for the induction board throughout the period of Selective Service, a considerable number of mental defectives have gotten into the armed forces. This is not surprising for there are mental defectives in every community who are hardly thought of in that category, except by those of us who give special attention to such things as intelligence quotients. Errors have been made in the acceptance of some of these men, but water that has flowed over the dam cannot be turned back. The Army will make very good use of mental defectives, but the armed forces still have the idea that they can get enough persons of first-class mind to win the war. It is very important that mental defectives should be well understood, and that a condition that has been lifelong with them but which has not prevented them from earning at least a modest income should not horrify their prospective employers because the diagnosis appears on a military discharge. Here, again, understanding by the psychiatrist and proper support by a discerning employment agency is of great importance both to the veteran and to the community.

The psychoneurotics in particular need early help and skilled help. The psychiatrist and social worker can be most helpful if given the opportunity of aiding the veteran to make a prompt adjustment to life in the community and to keep out of a state of mind where he would be demanding this and that, and wasting good hours on thinking about his troubles—particularly his physical complaints. We may as well dismiss any moralistic views of this situation, and blame ourselves if we allow things to develop as they did after the other war. To be sure there will be some neurotic invalids. There always have been since the earliest medical records, but what we can avoid—in my opinion—is having an undue number of neurotic individuals because of unwise methods of handling their problems or

because of frank neglect of their problems.

Physicians know that epilepsy is a very common condition in the community, more common than is realized by those who are outside medical, social work and insurance circles. One reason why it is so common is that in many cases it is not disabling. Every epileptic should have a medical advisor who will exercise some influence on his course of life indefinitely. It should be with him as with the cardiac case. Great numbers of convulsives with such a program go through life pretty comfortably, and indeed a considerable number seem to go through life pretty comfortably in spite of no medical attention for the epilepsy. A competent thorough examination including electroencephalographic findings should be made, unless the Army or Navy has already made it and forwarded the findings to the home physician or the home clinic. Some of these boys are much troubled when they are discharged with the diagnosis of epilepsy, not having previously applied that dread word to the spasms or forgetful state that had been an incident of their lives. The emotional attitude of the patient needs some initial help, and, of course, the disorder needs whatever drug and dietetic treatment that will keep it under control.

Some inadequate people were getting along before the war but could not stand being uprooted. It may be hard to get them going again, and they too need good advice and supervision; probably social service will be needed in liberal measure.

Alcoholism is tremendously prevalent in this country, as I need not say in a State that has gone to the trouble of setting up a special branch of one of its hospitals for the treatment of this disorder. Some alcoholics are no more favorable industrial prospects than are general paralytics. On the other side are alcoholics all around us employed in one way and another, and some of them making enough money not only to have their drink but also to support their families more or less well. Many of them come out of the Army with the same unconcern that they had cultivated during previous episodes of misbehavior, but some of them are rather jolted at having the diagnosis actually go on the discharge papers. A considerable number of alcoholics are best treated in outpatient clinics. At any rate such clinic facilities should be available.

Sommer and Weinberg point out also that a number of the discharged veterans need some help to overcome the unpleasant label that has been put on their papers. They are said to have undesirable traits or to be inapt. Now a possible employer may interpret inapt as to be clumsy and may be willing to take a clumsy chap, but he may suspect that the word covers inability to get along with people, and that is more serious in a factory or a store. It might be serious on a dairy farm, too, where a surly, aggressive person may misuse the cows and cut down their production. The word "undesirable" covers a multitude of defects and a good many sins. Clinic facilities therefore need to be available to study each of these men and give the prospective employer some information about the assets of the patient as well as his liabilities.

Considerable money, Federal and State, has gone into programs of industrial training in the last two or three years. In some States this program has been well carried out. The instructors have been competent, the equipment purchased has been adequate, the local school system has furnished suitable quarters, and the principal or the superintendent of schools has met any need for discipline or interpretation. If you have had the same fortunate experience in Virginia that I had the pleasure of hearing reviewed in my home town in New York recently, you will recognize this as a very great asset. Some of these discharged veterans have never been trained to do well the kind of thing they like to do. For the first time in their lives they have come to the attention of the psychiatrist. He gets them to explain how they feel disappointed and frustrated, and with the aid of such a training organization he can get them in position to enjoy work because they will be trained for it, whether it be the sort of thing they did previously or whether it be different.

It would be hard to imagine an economic situation more favorable for those who are being dropped from the Army and Navy at the present time. Persons laboring under very considerable handicap can get jobs now, and their work will be welcome even though it is not anywhere near perfection. Since agencies and individuals are likely to be hard pressed for time, there is temptation to slide every person into the first job that appears available, then dismiss all thought of him. A great deal of this will no doubt have to be done. On the other hand, a State like Virginia can do something better with a

large number of those who have been discharged.

I commend to you the program set forth by Sommer and Weinberg. Chief points are an adequate medical program, including psychiatry; suitable hospital treatment not unduly prolonged; short extramural psychiatry as indicated; consultant advice to the Legion, the Red Cross, and State agencies that are dealing with the veterans; some kind of certification to supplement the disastrous type seen on some of the discharge papers; advice to veterans' organizations to help stress work and self-support on the part of those who are coming out of the Army now; helping the veterans' organizations get wise legislation, leading to rapid rehabilitation.

Connecticut is a State that is favored like Virginia with a Society for Mental Hygiene. Perhaps it is even more favored than Virginia in that the Society is older and has for years fostered community clinics. The State took over the rural part of the clinic program several years ago, but only for service to children. From a survey program in Connecticut I draw a few points. There should be psychiatric diagnosis, treatment where needed, and advice to case workers. These services should come from existing clinics in the cities and traveling clinics in outlying districts. Of course, it is difficult to expand the present program because psychiatrists are hard to find. Legislation might be necessary to authorize the public rural clinics to serve adults as well as children. Then there should be vocational adjustment clinics, on the model of the one run in New York City by Dr. Emily Burr for the National Committee for Mental Hygiene. This is an experimental attempt to meet the needs of men rejected from the draft or returned from the armed forces for psychological causes. If Federal funds bring State departments of education further into this field, effort must be made to get them to use psychologists with a psychiatric point of view, "sufficiently trained and willing to recognize need for psychiatric treatment." Some departments of education would be slow to adopt that course, no doubt. In Connecticut the education department used to run guidance clinics on W.P.A. funds, and something of that sort would be very timely now. To support this program there must be educational service for the general community so as to create understanding among families, friends and employers, and particularly for Home Service Workers, many of whom are volunteers with no specialized training. Connecticut, like Virginia, is in the throes of making its plans. Exchange of experience might help both commonwealths.

Essentially, then, a considerable amount of time is needed from competent psychiatrists, either in the office or in clinics. Much time will be needed by well-trained social workers to study the homes and the neighborhood and to look after the patient's needs when he is not in the presence of a physician. All community resources may have to be called on: the school, the church, the employment agency, the welfare department, and the police. Thoughtless people might put the police at the head of the list, but I am thinking of those police organizations that are not merely interested in suppressing violence, but have constructive training and the social view. A great deal of this rehabilitative work will, of course, go on without any reference to the psychiatrist, but unless he sits in on the community planning, and unless he has much to do with a considerable number of the individual patients, a great deal will be overlooked and the total benefit obtained by the community will be much less than should be the case.

Bethesda, Maryland.

THE DOCTOR'S OWN WIFE—HIS FOURTH INVESTMENT

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Whatever loveliness is, the gay nineties physician had it.

He tucked his frock coat in a gig. He loved and worked for his patients.

But in '29 the new doctor motored hard. He wore a funny morning coat and worked for himself. He seemed to love nobody.

Now he walks often. New coats are rare. He works for the State and is beginning to love again his fellow men . . . a little bit.

From discussions as to what most influenced the doctor's life, what would mould him scientific, yet fashion him kind, it was gleaned that his wife came fourth.

The doctor must be good to that wife for she isn't the girl he intended to marry.

Research into ten doctors' lives shows that seven had pasts. Seven admitted a tender love for some lass he didn't wed—years before. Three admitted nothing.

The first was wary. She learned that training meant twelve years—and years can be so long. Its probably as well, for the job of the doctor's wife is heavy and the purse is light. Some are born to siller but most wives scrub from wedding to widowhood.

At thirty the vagabond doctor has cost much and earned nothing. Somebody paid for his porridge, his rented dinner jacket, his first girl's roses, his whiskey and fare as a medical missionary, and for his time when other lads were doing something. Economists call them wasted man years. Unless he rewards for these gifts he is a social thief. His wife should be the first to help.

A drummer was asked what drives a doctor to success—or failure. He dropped his jaw. His metal toed grip scratched the desk while he tucked in catheters and vitamins from A to P. His stubby fingers caressed the B's and E's for they could take the old, poor and sterile and make them young, rich and fertile. He fondled the new vitamin which might make the thin haired throw away their switches and the bald their wigs.

"I know", he hiccoughed, "it's his missus".

The doctor's choice must be careful. The best beans are baked all night. In best homes courting is slow. No marriage should be hurried for the halter is of well tanned leather.

The wife mustn't be ailin'. She cannot have stuporus psychosis.

The most publicized prepaid medical schemes avoid her. They take the brewer's daughter and the common law wife. They even admit senators but they won't have insane people nor doctor's wives on their plans.

Life insurance companies are afraid if she has twelve children. If she has none they are suspicious. If she expects one they raise the rate.

It is almost illegal for her husband to treat her. If he loves her he's afraid to. If he doesn't she's afraid to let him. No other doctor wants to for there is neither fee nor praise. If anything's askew he gets twice the criticism. So the wife gets samples from the doctor's dusty shelves.

Not long ago playing fields marked University papers. If a student could kick high he certainly graduated and might gain honors. Such days when students graduated on the thickness of their skulls rather than their contents are gone. High pre-medical requirements, heavy curricula and maximum post graduate training mark the doctor an intellectual.

His wife must know as much as he does. If she knows more she mustn't tell him. She need not learn the dips and dives of the electrocardiogram, but accomplishments like the care of antiques, the culture of flowers or the training of children should equal his achievements.

The doctor's children have 50 per cent more chance of being failures than their kind because there is only one to teach them. She must hurry them to the toilet, walk them to Sunday school and wave to them at graduation all alone. The doctor is busy.

As the train smokily fades and they wave away the lad in khaki she goes home alone to look at the framed likeness a month old, maybe little shoes eighteen years old. He goes to the office.

Centuries ago Rebekah went to the well in her bare feet and hooked the leader of a tribe. She upset the social apple-cart.

There still are and always shall be social sets. The doctor's no exception. He and his wife will team more happily when socially equal.

Sets are based on what you have and want. Some like quiet, knowledge and old wines. Others crave boisterousness, vapid talk and beer and count their silver when guests are gone. Doctors fall in both groups.

The doctor deals with distress; tired people and those with croupy coughs. His home must breathe gentility or life is a conflict.

A surgeon cannot be slovenly in the living room and meticulous in the operating room. It may be easier in the operating room. There he's the boss.

His wife need not commence at a finishing school nor finish at commencement exercises, but she must know how to entertain.

Beautiful mansions, old goblets, century aged chairs mark environment for entertainment. The doctor's wife may never have them. Indeed, she may know the touch of potato skin better than wedgewood, and the texture of a mop more than ermine. She can, however, have language of education, manners of gentility and food for an epicurean.

Too much entertaining in the doctor's home becomes obvious. The doctor's wife should entertain friends, cultured folk, lonely people and those less fortunate.

Fading Charms

By an old fireplace hangs a painting of a woman famed in history. It cost real money forty years ago. As bits of light are thrown from the embers a long nosed wife leans from a balcony. She waits for Socrates.

Old Soc returns from a bit of a bender. He shuffles among the shadows. He shrugs his shoulder at her court. The lantern wick is low. The black dog droops his tail. Her name is Xanthippe. She is Classics famous nagger.

Perhaps Soc, as a lad, called her Xanny and strummed a lyre beneath her chamber window. No doubt she leaned beckoningly over the sill. Probably he climbed the wall and touched her lips lightly as a bending willow caresses the brook. So has youth done whenever there came the fragrance of the blossoms and the floating of dainty clouds in spring,—whenever, indeed, the giver of romance dipped his golden bowl.

Time, relentless and cruel, had taken her frivolous wisps of humor at 17, shrunk them to irritating traits at 30 and shrivelled them to scalpel thrusts at 45. She became a nagger.

The doctor's wife may beg a little, egg a lot, but must not nag. No perfect husband lives. A white collar soils easier than a coloured one and it isn't worn as long. He may not be brilliant. He has only one chance in 4300 of being in Who's Who. The will-o-the-wispy public may not think he's great, for in people's minds the doctor is only as big as the town he's in. Big cities bear the profession up. Medium towns tolerate him but villages seal him with oblivion. There they call him Doc.

This impression invades the profession as well. When the village doctor visits the city hospital he meets veiled toleration. He may be silently considered a dizzy old nit wit unless he has a wealthy patient to refer. Then he is a charming practitioner quite too big for his community—a gentleman of the old school.

La Vie Seule

The doctor's wife should let him be in his task of stopping pain. Being in the privileged class he will enjoy duodenal ulcer, coronary thrombosis and a lonely life.

That loneliness is born of a thousand secrets and tinged with worries he cannot reveal. The doctor has one serious case a week and patients die through his fuzzling.

Perhaps he said the pain would be better after operation. And it wasn't. A clergyman can guarantee heaven and not get caught. There is no come back. The doctor is wise to guarantee nothing.

She may cook his goose but she won't tell him how to carve in front of guests nor interrupt his story to finish it.

One doctor could dangle his foot over the wing chair and look so plaintively into her eyes. He'd say "Darling I adore you", while his thoughts were far with some fair debutante whose skin was soft as the pansy's petal. His wife believed him. Such a woman need never read lines like these.

Someone Else

The doctor's wife is not jealous. Ladies wake him up, criticize his drinking and exhaust him with

their pregnancies. If vision is impaired they may even fall in love with him.

Modern medicine lessens intimacy with the patient. A heart specialist may define a tracing while drinking beer in another city. A radiologist in bedroom slippers sees the outline of a lady's stomach five hundred miles away. He doesn't know the maiden's curves nor the color of her skin.

Long range practicing is recent. Before the stethoscope there was little or nothing. If then a pretty woman had a cough the doctor would nestle his bearded face against her lily white bosom and listen with one ear for rales and the other for the patient's husband.

It is true a doctor may call a little oftener if the patient is pretty. Life would be drab indeed without perky chins, pouting lips and gowns like robins' eggs.

Pangs of jealousy are like pains of a phantom leg. There is nothing there.

Side by Side

The doctor's wife sympathizes with her husband. No one else has time.

Of one hundred consecutive patients entering an office only two asked how the doctor was. One, an optimist, wanted to borrow a hundred dollars; the other wanted a drink. People are interested in themselves. They co-operate like nations when their skins are in danger.

If the snow is deep and the wolves are lean the moose herds with his fellows. When spring comes his kingly shoulders crash through the spruce, his hoofs pound the muskeg. He becomes an individualist.

The doctor is an individualist. Socialized medicine may try to level him but they shall never unlock the repository of his heart where secrets of folk lie hidden.

The doctor's pajamas will often drip with perspiration as he reaches for the 'phone, for fear of something undone. A cast may be tight or a sponge left in a belly.

She is fortunate if he worries. If he doesn't he burns with no creative fire. He lies in the intellectual ash can.

The alert doctor must do something never done before. The doing may soothe pangs of humanity. It may impanel his name in the halls of time. It won't make him happy. The scientific unresting mind is never happy.

There is one who can sympathize with him from depths of kindness, and no one else need ever know. She is his wife.

Before 1870 the doctor looked at the patient. Pretty or stodgy they undressed before him. The telephone changed that. Now he can charge a fee without seeing the sufferer.

The telephone is indispensable. Of one hundred consecutive patients the doctor's phone was used in over seventy. In rural practice one-third of the calls may be answered by the doctor's wife.

She must master that gadget for the voice is a keg of emotions. Some voices are cold as a dictator's heart, or weak as an appeaser's knee. They vary from the school girl's squeal to the yawn of the tired mistress.

A woman may wait long for courage to telephone the doctor. An unkind voice may send her away another year with a lump in her breast and another lump in her throat.

She may also go to another doctor who is *always less competent* than her husband.

When the phone rings she should learn the name, the street and number, whether north or south, upstairs or down, front or rear. She should ask their phone number and if the patient is seriously ill. "Immediately" means in a few minutes while "right away" means any time in the afternoon. She might learn how many doctors they have called. Even doctors evade the shiftless.

She could tell them to leave the blind up to light the place. Curtains and blinds tell how people pay. Folks with venetian blinds are slow. Neat chintzes mark integrity. No blinds have nothing. Strange to tell the purple curtains pay cash.

She must learn the lexicon of the laity. Folks talk about diseases according to its speed like "creeping paralysis"; "running sores"; or "galloping consumption". They mention direction such as "inward trouble" or "outward goitre". Others talk in terms of motion like "blind staggers"; "quivering of the navel"; and falling arches".

A kind, efficient voice will help the doctor's practice.

When he's young and practice is lean he likes to hear the 'phone; but older, it irritates him, unless he has boring guests, long winded salesmen or the wife has dolled him up for church.

If it's long after midnight and she drowsily an-

swers "No, I'm sorry, the doctor isn't in", he shouldn't nudge her and shout "who is it".

A Hollywood beauty strolled in the Louvre. She smirked at the statue of a woman. The actress said "Her nose flattens into her forehead like frontal sinusitis. Her mouth's too small. It isn't parallel with her eyes." She might also have noticed that the shoulders were too narrow, the hips too wide and the umbilicus too conspicuous. She was all wrong. Yet sculptors for 120 years came afar to study her silent form. Universities quarrel about her origin, and her statuettes are sold in every land.

She is the Venus de Milo.

By crease and curve she won't do, but altogether, she is lovely.

So, too, the doctor's wife may lose the lustre of her hair. Years may make her bones as brittle as frozen corn tassle. Winters and worry will crochet her dry skin with crow's feet, but if charm replaces exuberance and dignity outlives frivolity many will say "She is beautiful".

Tangled Skeins

The lives of one hundred doctors revealed many happy marriages. Most married sacredly, but one couple wed in their cups and two in a hurry. One settled differences with prayer, another with black eyes.

One doctor said he wasn't going to be influenced by the bubblings of human emotions. He was going to marry a maiden chaste, thin around the waist and worth a half a million. He did marry wealth and she kept it. His room mate married poverty and they shared it. Another took to himself an illiterate maid with asthma. Both got worse.

Great men in other walks have met misfortune. Lot's wife was salted. Josephine was jilted, and Delilah had her house ramsacked.

A doctor born in Cos 460 B.C. had an oath named after him. Seventy articles made him famous, but no one hears of Mrs. Hippocrates.

Two hundred and eighty-three pages about Harvey, who discovered that blood goes round and round instead of standing still, gave only a few lines to his wife. She had a parrot who disappointed her when it died. All its life she'd scratched its back, thinking it was a male and it wasn't. Harvey left his wife one hundred pounds.

Mrs. Hunter had a tough time with the famous anatomist. He was bad tempered. Her life, nevertheless, was a musical success which illuminated his greatness. She wrote a little lay that runs—

> "My mother bids me bind my hair
> With bands of rosy hue.
> Tie up my braids with ribbon rare
> And lace my bodice blue."

Little girls in short blue dresses and long pigtails still sing it at recitals.

Lister gave up his strict denomination for a dainty chin. Love indeed rides over parents' wishes and prejudices like a thoroughbred carries the high locked gate. For thirty-seven years when night came and tired lines would show, Agnes tucked a woolen shawl around him. Then she'd read great phrases, love stories and simple lines until the kind high forehead bowed in sleep—sleep, the anesthetic that comes alike to scientist and serf.

A jerky old fashioned train stopped at Rochester in 1870 and a man strolled quietly through the crowds. Dr. Mayo had come home.

Later, in the living room, the wind howled, a blind rattled and the clock ticked, but none of them were heard. Folks leaned around the picture of the new microscope that would cost six hundred dollars. They would have to mortgage the house.

"Well, if you can do better by the people with this new microscope you should buy it", Mrs. Mayo said and raised the curtain on a drama in medicine: the development of the Clinic. The doctor's wife is unselfish.

Charm

Charm is a tiny grain that's found when the kettle of life boils nearly dry. The doctor's wife should have it. It's like the fragrance of scented cedar between the pages of a long unopened book. It belongs to those who love people, jobs, broken dolls and the architecture of cathedrals. People have it who worry about the loss of an old vase, the bombing of children, or a puppy's swollen ear. Like old mahogany it is good inside but shows up with the rubbing, and those whose own heart strings have been a bit twisted have it most.

Running Sands

A distinguished doctor lectured at Convocation Hall two decades ago.

Bits of sunlight played hide-and-seek among the colored gowns. The doctor appraised the scientific studies of the day. Lads looked at co-eds and dreamed of limousines and busy practices. Rugby

players twisted their cramped limbs and strained towards the door.

Suddenly all were still when he leaned forward and told of a Southern physician whose sweetheart fell from her horse. Incurable paralysis ensued. Every day for some twenty years he rode to visit her, or sent a message. Whether the blue grass waved with windy rain or dust rose by running cattle, he went.

One morning he couldn't go. Soon there gathered lovely ordinary people. Some were in morning coats and some in overalls. There were old and young; colored folk and white.

Beneath a Southern sky whose very clouds seemed kind, they erected a tablet to his memory.

"The Doctor must love her.
And she must love the Doctor."

During the Great War I the writer conducted a funeral squad from the ship. They crossed the gang plank, marched through the village and up the hill. A volley was fired over the remains of an officer killed in action. He lay not far from his native glen. The writer didn't know the lad, nor ever knew his parents. The terse naval orders had intimated the father was a doctor.

The aged couple stood arm in arm at the heaped-up earth while the shots sounded over heather and hillock. As the setting sun cast shadows behind the stones and the thudding of the turf was heard she pushed her trembling hand farther down and grasped his fingers. They held each other's hands very, very tightly.

The doctor's wife must love him all the way.

An Oliver Wendell Holmes Centenary.

In the preface to his famous essay which, incidentally, received the Boylston Prize of Harvard College, Holmes announced that "the disease known as puerperal fever is so far contagious as to be frequently carried from patient to patient by physicians and nurses". This was printed in the New England Quarterly Journal for Medicine and Surgery in April, 1843, and had been read before the Boston Society for Medical Improvement.

Holmes cited a case in which a woman died of puerperal fever and in less than a week the physician who had delivered her and had made the autopsy also died in consequence of a wound received at the examination. Dr. Holmes added that all the women whom this man had attended in confinement in the interval were attacked. Dr. Holmes stated that he could tell in advance what women would be attacked by the disease upon hearing by what midwife they were to be delivered or by what nurse they were to be attended, and in almost every instance the prediction was verified.

Of course Holmes was bitterly attacked for incriminating the profession, but he begged to be listened to. Such leaders of the day as Hodge and Professor Meigs preferred to blame an accident or "Providence" rather than something they could not understand. Holmes asked them to make deductions from their own reason and from facts laid before them, not from the "weight of authorities". Holmes quoted the liturgy in the Book of Common Prayer which especially mentions women in childbirth for whose preservation prayers are offered. Holmes drew the most pathetic picture of the sufferer and the stricken family and appealed for help.

Even McDowell in his day, more than forty years before, boiled his instruments and took unusual precautions as to cleanliness but it was to be many years before surgeons were to have gloves and antiseptics.

How they would have welcomed the new drugs!

GUY HINSDALE.

LUETIC QUADRIPEDAL GANGRENE—REPORT OF AN UNUSUAL CASE

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Pedal gangrene is not an uncommon finding in the literature. The case we are reporting is one synonymous gangrene of the ten fingers and the ten toes accompanied by gangrene of both ears, complicated by a luetic history and a positive Wassermann reaction. This is certainly an unusual syndrome.

According to Stokes, the aorta is the most frequent site of vascular changes in syphilis and the circle of Willis is next. Stokes has this to say in his classic work:

"The well-known tendency of syphilis to produce obliterative endarteritis is one of the fundamental pathologic changes which underlie the clinical manifestations of the disease, leading to an interpretation of any vascular symptom or accident as syphilitic *per se* provided it occurs in conjunction with syphilis." However, he qualifies the above statement with another dictum:

"Syphilis of the arteries of the extremities is comparatively uncommon and syphilitic thromboses and endarteritic changes in the arterioles rarer still. Peripheral capillary endarteritis gives rise to clinical pictures suggestive of Raynaud's disease and arteriosclerotic gangrene."

The commoner conditions which were considered in this case as possible etiologic factors were Raynaud's disease, Buerger's disease, diabetic gangrene, senile or degenerative arteriosclerosis, infectious embolism, frostbite, and ingestion of poisons.

The patient in question was M. M., a slightly built white woman of 25, married, and the mother of two children.

Fig. 1.

Fig. 2.

She first appeared for treatment in 1941 when she was suffering from swelling of both wrists, both knees and both ankles. The Wassermann reaction was strongly positive. She was given eight doses of mapharsen and three doses of bismuth with immediate cessation of symptoms. She declined to take further treatment.

She returned in November of 1941 with a severe iritis. The Wassermann reaction was again positive. She was given six doses of mapharsen and nine

doses of bismuth with complete cessation of symptoms again.

The patient was not seen until February of 1943 when she came in complaining of intense pain in the feet, hands, and face. The feet, hands, and face were a dusky red and somewhat swollen. There was no history of frost-bite or exposure to chemical poisons. In a few days the feet, hands, and ears became dark blue, followed soon after by actual gangrene of the fingers down to the middle phalanx, the toes down to their bases, and the ears in their outer third.

The pain disappeared after the dry gangrene set in. There was no sequence or cycle suggestive of either Raynaud's disease or Buerger's. The gangrene occurred only a few days after the onset of the disease.

The Wassermann reaction was positive. The urine was negative. The blood pressure was 130/82. A blood calcium did not reveal any significant change. Soft-tissue x-rays failed to reveal any abnormalities. There was good dorsalis pedis and radial pulsation, indicating the disease was peripheral and arteriolar in nature.

It is interesting to note the stages of the gangrene. The right hand was involved first, the right foot second, the left hand third, the left foot fourth, and the ears last. The fingers and toes were treated by amputation, the ears were allowed to heal by granulation. The patient was completely well in June of 1943, five months after the onset.

It is a fact known by syphilologists that a small amount of anti-luetic therapy breaks down the body resistance and allows complications to run rampant. And this type of therapy is considered worse than no therapy at all.

In view of the above findings we feel justified in applying the luetic tag to this bizarre syndrome.

American Board of Obstetrics and Gynecology.

The next written examination and review of case histories (Part I) for all candidates will be held in various cities of the United States and Canada on Saturday, February 12, 1944.

Arrangements will be made so far as is possible for candidates in military service to take the Part I examination (written paper and submission of case records) at their places of duty, the written examination to be proctored by the Commanding Officer (medical) or some responsible person designated by him. Candidates for the February 12, 1944, Part I examination, who are entering military service, or who are now in Service and may be assigned to foreign duty, may submit their case records in advance of the above date, by forwarding the records to the Office of the Board Secretary.

The Office of the Surgeon-General (U. S. Army) has issued instructions that men in Service, eligible for Board examinations, be encouraged to apply and that they may request orders to Detached Duty for the purpose of taking these examinations whenever possible.

All candidates will be required to take both the Part I examination, and the Part II examination (oral-clinical and pathology examination). Candidates who successfully complete the Part I examination proceed automatically to the Part II examination to be held later in the year.

For further information and application blanks, address Dr. Paul Titus, Secretary, 1015 Highland Building, Pittsburgh (6), Pennsylvania.

China Hospitals Have Odd Heating System.

An ingenious heating system has been devised by the International Peace Hospitals in China's remote Northwest region to take the place of non-existent furnaces.

Open charcoal braziers, used by most Chinese houses in this area, generate too much dust and gas for them to be practical in hospital wards or operating rooms. So the Peace Hospitals, financially aided by China Aid Council of United China Relief, have built special huts for wards and operating rooms. The south walls of each are made entirely of glass so as to admit the maximum of warmth from the winter sun. Under the floor of each hut is a brick "k'ang", or box like stove, which, in effect, transforms the room above into a sort of oven.

USE OF SODIUM PENTOTHAL ANESTHESIA*

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The following paper is based on 600 consecutive cases in which sodium pentothal was used as the sole anesthetic.

We started using sodium pentothal approximately one year ago. At first we used it only for short procedures, such as abscess and D. & C., but it seemed to work so well that at the present time we rarely use any other anesthetic for patients between the ages of 14 and 60.

Sodium pentothal 5 per cent solution is given with an ordinary 50 cc. syringe with rubber tubing and needle. The syringe is held in a Rudder Syringe Holder (made by Estes Surgical Supply Company, of Atlanta) which is clamped to an arm board. This allows the anesthetist to sit at head of table and administer oxygen which is essential to a good anesthesia. Pre-operatively the average adult is given morphine grs. ¼ and atropine gr. 1/150.

There are three complications of the anesthesia which should be watched for and can be easily controlled.

I. Patient may cease to breathe for a few moments during the induction. Carbon dioxide and oxygen under pressure restores respirations in a minute or two.

II. Hiccough has occurred in 15 to 20 of our patients. Oxygen and carbon dioxide has not relieved this. Our anesthetist tried a small dose of nitrous oxide on the last five cases and hiccough stopped immediately.

III. We have had one patient to cough through the entire operation, which was removal of ruptured appendix. Nothing stopped this cough until after the operation was over. However, anesthesia was satisfactory.

We had one near fatality which was caused by anesthetic, or possibly by our inexperience. This was a woman 45 years of age with a subacute appendicitis. This was among our first few anesthesias and we were not very familiar with it. As the incision was being closed the patient went into general collapse. Respiration ceased and pulse was not palpable. She was given adrenalin, picrotoxin, and artificial respiration. She recovered in about fifteen minutes. She made a complete recovery and two hours later she was seen sitting up in bed talking. She is the only one that has caused us any concern.

We were reticent for sometime as to the advisability of doing Cesareans under pentothal for fear of damage to fetal respiration but we have done twelve Cesareans to date and uterus contracts well and babies breathe immediately. We only give atropine pre-operatively. The baby was very sleepy following section on the first case because the mother had 3 gr. of nembutal pre-operatively which has very similar formula to pentothal.

For simplicity these operations performed are classified as laparotomies which include cholecystectomies, ruptured gastric ulcers, gastro-enterostomies, appendectomies, hysterectomies, salpingectomies, hernias—ventral and inguinal. Total 341.

Pelvis—includes perineorrhaphies, cauterization of cervix, D. & C. Total 116.

Orthopedic—includes open and closed reductions, amputations, and tendon sutures. Total 62.

Obstetrics—includes Cesareans and hysterotomies. Total 18.

E. N. & T.—includes enucleations and muscle operations. Total 5.

Miscellaneous—includes thyroidectomies, mastectomies, hemorrhoidectomies, cystotomies and deep abscess. Total 58.

The longest operation was on a boy of 18 who had a ruptured common bile duct. We used 70 cc. of 5 per cent sodium pentothal. He did not wake up for about twenty-four hours but condition was good at that time and he made an uneventful recovery.

The reasons that we like sodium pentothal are the following:

1.—Ease of administration and induction—patients go to sleep and are relaxed in one to three minutes.

2.—Perfect relaxation—the abdominal wall is completely relaxed even in cases of ruptured gastric ulcer. There is no straining and intestines do not come up into incision. We rarely use retractors in

*Read at a Staff Meeting, of the Clinch Valley Clinic Hospital.

cholecystectomies. A laparotomy pac is sufficient. Due to relaxation, operating time has been reduced, and, consequently, patients recover faster.

3.—Patients come out of anesthetic just as if they were waking up from ordinary sleep. There is no nausea or vomiting. We have only had a few cases of vomiting and these were traced to morphine which was used pre-operatively. Due to the fact that they recover from anesthetic so easily, they get well quicker. We have done eighteen cholecystectomies with pentothal and all but three went home on either the eighth or ninth post-operative day. These three had common duct drainage. On the whole all patients are ready to leave the hospital four days to a week sooner than they did with other forms of anesthesias.

4.—Mortality rate is lower. Out of 600 patients there was only one death and that was a patient who had multiple compound fractures of the skull. Death was definitely not caused by anesthetic.

5.—Operating time is reduced. Average time for 341 laparotomies of all kinds was 32 minutes.

Contra-indications seem to be in operations of pharynx due to complete relaxation of same. We have found no other contra-indications to this anesthetic except those that any form of general anesthesia would be detrimental.

CONCLUSION

Sodium pentothal anesthesia

(1) Gives good relaxation and can be used for practically every kind of operation on patients between the ages of 14 and 60.

(2) It is the best anesthetic for cholecystectomies, ruptured gastric ulcers and Cesarean sections.

(3) Operating time is shortened and recovery time shortened.

(4) Mortality is reduced—one death in 600 cases, or less than two-tenths of one per cent.

Monograph on Lymphogranuloma Venereum.

Noteworthy contributions to the detection and differential diagnosis of lymphogranuloma venereum are those of Rake, McKee and Shaffer, who have cultivated the agent in the yolk sac of the embryonated chicken's egg and obtained concentrated suspensions of elementary bodies. In this manner a highly purified and specific antigen, known as Lygranum S. T. has been prepared which is rapidly supplanting antigens prepared from either human pus or mouse brain. These workers alone, and in collaboration with Dr. A. W. Grace, have used the yolk sac antigen for the complement-fixation testing of serum suspectedly infected patients. The specificity and sensitivity of this antigen (Lygranum C. F.) provides an additional means of detecting early cases of lymphogranuloma venereum.

In the course of investigations involving these tests, there accumulated at the Squibb Institute for Medical Research a considerable mass of information concerning the properties of the causative agent, the epidemiology and clinical aspects of the disease. To facilitate the work of investigators and teachers in this field, and perhaps to encourage the interest of potential investigators, practicing physicians and health officers, it was decided to compile and publish the information at hand. The result is a 32-page publication entitled Lymphogranuloma Venereum—a Monograph. The value of the book is enhanced by maps, charts and numerous illustrations in color.

The Monograph is available gratis to physicians and to public health officials, and will be a valuable addition to medical college libraries. Those who request copies should enclose their professional card or use their professional letterhead.

Winthrop Chemical Company President Honored.

In recognition of his "distinguished services in medicinal chemistry", the Philadelphia College of Pharmacy and Science recently conferred the honorary degree of doctor of science on Dr. Theodore G. Klumpp, president of the Winthrop Chemical Company.

COMPLETE ROENTGEN AND OPHTHALMOLOGIC EXAMINATION FOR OCHRONOSIS IN TWO ALCAPTONURIC CHILDREN*

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WALTER J. REIN, M.D.,
Richmond, Virginia.

Pomeranz, Friedman and Tunick[1] have reported the roentgen findings in two cases of alcaptonuric ochronosis in adults and have reviewed earlier roentgen findings in alcaptonuric ochronosis. Although it usually has been considered that ochronosis was due to an accumulation of pigment over a period of years and did not develop in alcaptonuria until middle age or later, Smith[2] has pointed out that evidence of ochronosis may be found in the eyes as early as the third decade of life. To the best of our knowledge no one has had the opportunity to do a complete roentgen and ophthalmologic examination for ochronosis in alcaptonuric *children*. In view of the roentgen and ocular findings in alcaptonuric ochronosis in adults, it was deemed worth while to make the following studies on two alcaptonuric children, ages 10 and 15, to determine whether ochronosis detectable by these methods was present in these children at this age. Although our findings in regard to ochronosis in these children are at this time essentially negative, it is hoped that the development of the condition may be followed by similar studies on these individuals in the future.

The patients were two alcaptonuric Negro children whose family was investigated and discussed previously.[3] Their urines gave all the usual qualitative tests for the presence of homogentisic acid, including chemiluminescence.[4] The qualitative tests were confirmed by actual isolation and characterization of homogentisic acid from the lead salt obtained from the urine of both children.[3]

Case 1. A colored male, aged 15 years, a school boy, with past medical history of measles and bilateral mumps but no serious illnesses or operations. The temperature was 98.6 F., pulse 90, respirations 22, B.P. 120 systolic, 60 diastolic. He was well nourished and the head, nose and mouth were essentially negative except for slight hypertrophy of both tonsils. Eyes were examined by Dr. W. J. Rein. The neck was negative. The chest showed the lungs to be clear to palpation, percussion and auscultation. No enlargement of the heart was detected. There were rare extrasystoles with sounds of good quality and no murmurs. $A_2 > P_2$. The abdomen was negative and the liver, kidneys and spleen were not felt. The extremities were negative except for a small recent superficial abrasion below the right knee. The superficial and deep reflexes were normal and there were no sensory disturbances. (Physical examinations of both patients by Dr. Pauline Davis.)

Electrocardiogram interpreted by Dr. N. Bloom showed: Lead I. Convex S-T, diphasic T. Lead II. Low T. Lead III. Low P, low T. Conclusions: S-T and T changes mean myocardial damage. Sinus tachycardia.

Case 2. A colored female, aged 10 years, a school girl with a past medical history of frequent colds. The temperature was 99 degrees F., pulse 82, respiration 20, and blood pressure 92 systolic and 68 diastolic. She was an obese, somewhat over-developed colored girl for her age. The head and neck were negative except for moderately hypertrophied tonsils and slight mucoid discharge associated with acute coryza. Eyes were examined by Dr. W. J. Rein. The chest showed the lungs clear to palpation, percussion and auscultation. No enlargement of the heart was detected but there was sinus arrhythmia and occasional extrasystoles were detected. There was slight roughening of M_2. $P_2 > A_2$ and no murmurs were heard. The abdomen showed no masses but was full and obese with slight tenderness over McBurney's point. The liver, spleen and kidneys were not felt. The extremities were negative with normal superficial and deep reflexes and no sensory disturbances.

Electrocardiogram interpreted by Dr. N. Bloom showed: Leads I and II. Normal. Lead III. Low P. Conclusions: Sinus arrhythmia. Tracing within normal limits.

*From the Departments of Biochemistry, Radiology and Ophthalmology of the Medical College of Virginia, Richmond. Aided in part by a grant from the Virginia Academy of Science.

Roentgen Findings

In 1941, Pomeranz, Friedman and Tunick published the roentgen findings in alcaptonuric ochronosis in adults. Changes in the larger joints, especially the dorsal and lumbar articulations resembling those frequently found in severe and extensive osteoarthritis of the Marie-Strumpell-Bechterew type with calcification of ligaments, bridging and eburnation at weight bearing surfaces, were found. No reports of roentgen findings in children have been noted in the literature.

Complete examinations of all the bones of the body were made on Cases 1 and 2. No positive roentgen findings were found. Epiphyseal development was normal with normal bone age in both cases. The skull vault and sella turcica were normal in each case. Special films of the cartilages of both ears after the technique of Fuchs showed no abnormal areas of cartilage or calcific deposits.

The joint spaces of the spine and extremities were within normal limits. There were no soft tissue densities or swellings within or surrounding the joints, or calcified intervertebral discs.

Fluoroscopy and films of the chests showed the lungs to be perfectly clear. Both cardiac outlines were of the mitral type. With barium in the esophagus, there was slight deviation towards the right, suggesting slight left auricular enlargement posteriorly. Cardiac pulsations were rapid but not irregular. Teleroentgenograms showed:

Case 1. RM 5.4, LM 7.7, T 13.1, RO 6.4, LO 5.3, Great Vessels 5.3 L 14.5. Transverse of thorax 26.9 and cardiothoracic ratio 48 per cent.

Case 2. RM 4.3, LM 8.1, 5 12.4, RO 5.8, LO 3.8, Great Vessels 4.0 L 13. Transverse of thorax 23.6 and cardiothoracic ratio 53 per cent. The pulmonary vascular markings were prominent in both hilum and trunk regions and the mitral configuration of the heart was much more pronounced in this case.

The positive roentgen cardiac findings in both cases prompted the electrocardiographic examinations given above.

The negative bone, joint, cartilage and soft tissue findings on complete roentgen examination are stressed, as no other findings either positive or negative in children with alcaptonuria have been found in the literature.

Roentgen re-examinations at yearly intervals to check these findings and possibly determine the time of onset of bone and joint changes described by Pomeranz *et al.* are contemplated.

Ophthalmologic Findings

Ophthalmologically all the eyes showed some alterations due to melanosis but the usual changes believed due to alcaptonuria could not be ascertained. An interesting feature consisted in that the younger, the female case, who excretes a larger amount of homogentisic acid, showed a greater degree of scleral pigmentation than the older, the male case, with a lesser degree of alcaptonuria. Vision of the male, each eye, was 5/5 uncorrected; the female showed right 5/22 left 5/30, correctible to 5/5 each eye with concave lenses.

Grossly one could observe no undue palpebral or bulbar conjunctival pigmentation. This statement must necessarily be made in a guarded sense when it relates to the conjunctival tissues of Negroes. The corneal pigmentation was likewise more manifest with slit lamp in the female, but in both cases was limited to a few cells of pigment in the epithelial layer near the corneoscleral junction. None of the irides showed more than a slight and relatively homogenous brownish pigment deposition on their anterior surface. The choroid and retina showed no undue pigment changes in either case.

The scleral backgrounds were bluish white, and about the area of exits of the anterior ciliary vessel were scattered grayish-blue spots, well demarcated, ranging from one-half to five or six millimeters across. These were not limited to the area of the palpebral fissure. These lay in the anterior scleral layers. Most were in close association with an anterior ciliary vessel and, as stated, were more numerous in the female. Black and white, and colored photographs were made, and an artist's interpretation was drawn—all this in the hope that the cases could be seen repeatedly in the future with the view of closely following any (possible) eye changes.

Summary

Complete roentgen and ophthalmologic examination of two alcaptonuric children, ages 10 and 15, has been made. Roentgen evidence of ochronosis was not found in either child.

Evidence of ocular pigmentation directly attributable to the hereditary alcaptonuria could not be ascertained.

Similar periodic examinations of these children are contemplated in order to note the onset and

course of ochronosis in these alcaptonuric individuals.

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3. Abbott, L. D., Jr.: Alcaptonuria in a Negro Family, *Science*, 94, 365 (1941).
4. Abbott, L. D., Jr.: Chemiluminescence of Alcaptonuric Urines, Proc. Soc. Exp. Biol. and Med., 49, 14 (1942).

Care of Wounded Extolled by Squibb.

The bravery and skill of the Army and Navy medical services and the marvelous new drugs that are saving the lives, rehabilitating the bodies and alleviating the pain of men wounded in action are extolled in a series of advertisements in national magazines sponsored by E. R. Squibb & Sons, manufacturing chemists.

Illustrated with authentic action photos from the Army and Navy, as well as posed pictures in training hospitals, the advertisements point out that 97 out of 100 men in evacuation hospitals during the North African campaign *didn't* die, that is 37 to 1, based on present statistics, that men wounded in Navy action won't die, and that men wounded in action often are under skilled medical care within ten minutes after they are injured.

Three reasons are given, quoting Surgeon General of the Army, for so many lives being saved—blood plasma, skillful surgery and "sulfa" drugs, in that order. Attention is called to a product newer than plasma—human serum albumin—which is made from blood given at donor centers, but is less bulky, easier to ship and use, and responsible for amazing recoveries from shock and burns.

The Upjohn Company.

Executive changes which are to become effective the first of the year will bring Donald S. Gilmore to the presidency, a position occupied by Dr. L. N. Upjohn since 1930.

Dr. Upjohn will assume the chairmanship of the board of directors, maintaining his active connection and his general supervision of the company's affairs.

In addition to the change in the presidency of the concern, the board elevated three men long identified with the executive direction of its affairs to vice presidencies, effective immediately.

Dr. E. Gifford Upjohn, who has been with the company since 1931 and is now medical director, will retain his present duties as medical director in the post of vice president. Dr. Harold S. Adams, who joined the company in 1926 and has been general superintendent, is vice president and director of production.

The third man elevated to a vice presidency is C. V. Patterson, a general sales manager. Mr. Patterson, also placed on the board of directors, now assumes the office of director of sales.

At the same meeting the board named Emil H. Schellack, who with Mr. Patterson has been a general sales manager, the general sales manager of the company. Other officers of the company are John S. McColl, vice president and treasurer; Dr. F. W. Heyl, vice president and director of research; and J. B. Vanderberg, secretary.

CASE REPORT OF MATERNAL DEATH

MATERNAL HEALTH COMMITTEE
MEDICAL SOCIETY OF VIRGINIA

The patient was a twenty-two year old colored primipara who apparently had adequate prenatal care from the third month of pregnancy. The prenatal course was uneventful. She was admitted to a hospital in active labor and was given scopolamine gr. 1/200 and nembutal gr. 3 for analgesia. After fifteen hours of active labor she spontaneously delivered a living child. She was delivered on a stretcher en route to the delivery room so that no anesthesia was given. Immediately following the second stage, just after the umbilical cord was clamped, the patient started irregular breathing and died after a few minutes. There was no excessive blood loss. An autopsy was not performed. Pulmonary embolism was given as the cause of death on the death certificate.

COMMENT

This is considered as a non-preventable obstetrical death. The cause of death is of course not known, and it is possible that a post-mortem examination might have revealed a cause of death that is not obvious from the information available to the committee. In the absence of any other explanation for the cause of death, pulmonary embolism seems as satisfactory a guess as any. There is nothing in the available record which seems to indicate any factors which may have prevented this death. It is instances such as this which makes it seem inevitable that there will always be some mortality in association with childbirth.

PUBLIC HEALTH

I. C. RIGGIN, M.D.,
State Health Commissioner of Virginia

The report of the Bureau of Communicable Diseases of the State Department of Health for October, 1943, compared with the same month in 1942, and for the period of January through October, 1943, compared with the same period in 1942, follows:

	Oct. 1943	Oct. 1942	Jan.-Oct. 1943	Jan.-Oct. 1942
Typhoid and Paratyphoid Fever	33	37	196	222
Diarrhea and Dysentery	477	423	5,174	4,364
Measles	273	39	9,664	4,842
Scarlet Fever	178	280	1,407	1,152
Diphtheria	79	183	316	515
Poliomyelitis	16	6	56	38
Meningitis	43	12	774	139
Undulant Fever	5	3	33	29
Rocky Mountain Spotted Fever	3	3	54	45
Tularemia	4	2	41	33

THE CONTACT CASE

A tabulation by residence of alleged sexual contacts of military personnel infected with venereal diseases made by the State Health Department's Division of Venereal Disease Control from reports received during February through June, 1943, indicates, as was to be expected, that a fair proportion of such potential foci of infection is to be found in localities immediately adjacent to military establishments. In this connection it is interesting to note that of a total of 2,677 reported contacts for the State at large, 1,118 were alleged to reside in the Hampton Roads area.

A further study of the tabulation discloses that 2,089 of the 2,677 contacts were alleged to reside in twenty-one important cities of Virginia. It, therefore, can be logically presumed that in a number of counties, not directly affected by military personnel, numerous contacts remain undiscovered.

A tabulation by counties, however, reveals that a comparatively large number of contacts were noted for Washington, Wise, Elizabeth City, Nottoway, Prince Edward, Princess Anne, Pulaski and Tazewell.

Every effort is being made by the local health departments and clinics operating either in these

counties or contiguous to them, to bring contacts to treatment. However, the practicing physicians in these localities have an opportunity directly to cooperate with the present public health efforts in this connection. Not only would an increased interest on the part of the medical profession be of direct and immdiate value to the war effort, but from a long-range viewpoint materially should assist also in reducing the incidence of venereal diseases among the civilian population.

In addition to venereal disease control information already in the hands of the private practitioners from the U. S. Public Health Service and the State Department of Health, the Division of Venereal Disease Control of the latter organization and the local health departments can be called upon for instructional procedures involved in successfully locating contacts.

WOMAN'S AUXILIARY to the MEDICAL SOCIETY OF VIRGINIA

President—MRS. W. CLYDE WEST, Alexandria.
President-Elect—MRS. PAUL C. PEARSON, Turpin.
Recording Secretary—MRS. C. C. SMITH, Norfolk.
Corresponding Secretary—MRS. N. G. SCHUMAN, Alexandria.
Treasurer—MRS. REUBEN F. SIMMS, Richmond.
Chairman, Press and Publicity—MRS. E. LATANE FLANAGAN, Richmond.

The National President's Letter*

TO THE PRESIDENT:

The annual meeting is now a happy and pleasant dream and we are launched on another year of Auxiliary work. With the all-out "war effort" our time is being diverted and in many instances our Auxiliary activities have become secondary.

At the meeting in Chicago a resolution creating a War Service Committee was passed (the National Advisory Council have suggested that this committee be called "War Participation Committee" due to the fact that the constituent state medical associations have a committee with this same name and that the work of this Auxiliary Committee could be tied up closely with that Committee from the state medical societies). Through this committee we hope to unite the efforts of our Auxiliary members to function as a group and not merely as an individual under the sponsorship of another organization.

The programs of the committees of the Woman's Auxiliary to the American Medical Association have been accepted enthusiastically by the members of the Advisory Council and will be published in the *Bulletin* very soon. Individual programs will be sent to you by the national chairman of Legislation, Public Relations, Program and War Participation. All of these programs have taken on new aspects which will include our social health problems brought about by the war.

In the *Bulletin* this year we hope to include a page that will be set aside for the news items concerning auxiliary members who are in strange communities away from their home auxiliaries in order that they will be invited to participate in the activities of the county and state auxiliary where they are now located. This page is yours to edit and we urge each chairman of publicity to send these news items to Miss Margaret Wolfe, Secretary in the Central Office, 43 East Ohio Street, Chicago (11), Illinois. Our *Hygeia* program this year is being united with the war effort and we must not overlook the placement of complimentary subscriptions in the service clubs in our community.

This war has opened new opportunities for the Auxiliary and we should take advantage of every opportunity to further the aims of the medical profession and the Auxiliary, through the defense measures in our community. We as physicians' wives should be the leaders in all health programs in Nutrition classes, First-Aid and Home Nursing as well as taking our place as a Nurses' Aide or Gray Lady or a Volunteer in a Hospital, office or laboratory. It has been suggesed by our National Advisory Council that one of our projects this year would be assisting with the recruitment of nurses and the new Nurses Cadet Program. As soon as the particulars about this program are completed they will be sent to you by the chairman of the War Participation Committee, the Chairman of Public Relations and the Chairman of Program for it will be necessary for these three committees to cooperate on this subject.

*This letter was sent Mrs. W. Clyde West, in-coming president of the Virginia Auxiliary, in August, shortly after Mrs. Carey took office.

Post-war planning is now being undertaken and the national resource board has begun to formulate plans, many of which will affect the practice of medicine. The members of the auxiliary were urged by Dr. Morris Fishbein in his address to the auxiliary at the meeting in Chicago to interest ourselves in the legislative matters now under discussion by the board. These are important days and each of us must assume our share of responsibility in matters that will affect the practice of medicine, as well as after the war, in order that the doctors who have left their practice of medicine, to defend their country, can return to the community to practice medicine, as a private physician and not medicine dictated by a government agency. Each auxiliary member should b alert to the changes taking place and she can become best informed by attending her Auxiliary meeting whose program is concerned with Health, War Participation and Post-War Planning.

The officers and members of the national board of the Woman's Auxiliary to the American Medical Association are eager and most willing to be of service to you this year. Your constructive suggestions and criticism will be appreciated and followed as closely as possible, remembering always that each project is taken to our Advisory Council for their action. With kindest regards and good wishes to you, your officers and members, I remain,

Sincerely yours,
HELENE M. CAREY
(MRS. EBEN J. CAREY,) *President.*

Book Announcements

Books received for review are promptly acknowledged in this column. In most cases, reviews will be published shortly after the acknowledgment of receipt. However, we assume no obligation in return for the courtesy of those sending us same.

The Nature and Treatment of Mental Disorders. By DOM THOMAS VERNER MOORE, O.S.B., Ph.D., M.D., Professor of Psychology and Psychiatry, Catholic University of America. Foreword by Edward A. Strecker, M.D., Professor of Psychiatry, Graduate and Undergraduate Schools of Medicine, University of Pennsylvania. Grune & Stratton. New York. 1943. 312 pages. Cloth. Price $4.00.

Ten Lessons on Meat. For Use in Schools. Sixth Edition. Published by the National Live Stock and Meat Board, 407 South Dearborn Street, Chicago, Illinois. Pamphlet of 138 pages. Price 10c.

The Mind of the Injured Man. By JOSEPH L. FETTERMAN, M.A., M.D., Assistant Clinical Professor of Nervous Diseases, Western Reserve University School of Medicine, Cleveland, Ohio. Industrial Medicine Book Company, Chicago. 1943. x-260 pages. Cloth. Price $4.00.

The reviewer, who, in the course of his daily clinical work, frequently examines and estimates the relationship (if any) of real or alleged trauma to subsequent symptoms in accident cases of all types involving the nervous system, hails the publication of this book as one would a refreshing breeze on a hot summer's day. After its study, physicians should be able to separate the wheat from the enveloping chaff much better and more expeditiously in cases of industrial accidents and those with medico-legal significance involving the nervous system.

The author of this volume, a practicing and teaching neuro-psychiatrist, has, in an orderly, commendably accurate manner, gone to the heart of the matter and considers, in all its aspects, the universal problem of the proper interpretation of trauma of the nervous system and its possible relationship to resulting symptoms and diseases that may occur. Throughout the book an excellent judgment is evident in interpreting the manifold, perplexing and complicated medico-legal questions that arise.

Dr. Foster Kennedy, in a characteristically witty and philosophical foreword, states that "the author has discovered that the outlook for recovery of an injury on the football field is (usually) a good deal better than that of an injury sustained while at work". The author constantly stresses the fact that the most significant factor in the matter of alleged posttraumatic symptoms is often the personality and background of him who has been injured; that is, the state of mind of the injured person. Here, indeed, lies the key to the correct interpretation of the posttraumatic case and often requires prolonged search and questioning of the patient, his relatives or (as so often is necessary) *disinterested persons,* to enable the medical examiner to penetrate the haze of irrelevant detail in order to arrive at the all-essential kernel of truth.

All types of neurological trauma are considered: skull, brain, spinal cord, peripheral nerves, the relationship of head trauma to the later development of brain tumors, degenerative nervous diseases, paresis, and epilepsy. The effects of electric shock on the nervous system are discussed.

Throughout these presentations, the reader is im-

pressed with the writer's sound clinical judgment, his astute observations and correct interpretations, requiring, as they often do, at least the wisdom of a Solomon, in order that real justice may be done to all parties concerned.

Malingering, hysteria, neuroses and psychoses all are considered in their relationship to neurological trauma in a masterly manner. The writer proves himself to be a good detective which, after all, is a necessary part of the professional armamentarium of all true physicians.

Occupational diseases (apart from acute physical injury) are elucidated. This portion of the book stresses the importance of including noxious agents (lead, carbon monoxide and other chemical poisons) in cases coming before compensation boards, causing, as they occasionally do, *legitimate* compensable disability. These problems are often not considered even today by many of our State Industrial Commissions, which limit their hearings and decisions to cases in which *acute physical injury alone* has occurred.

A final timely chapter on Neuroses of War is included, emphasizing (among other considerations) the prevention of war neuroses by proper selection and rejection of draftees *before* induction.

A fairly inclusive bibliography and an index are appended.

The reviewer heartily recommends the perusal and study of this book by all physicians who come in contact, in one capacity or another, with patients who have received real or alleged injury of the nervous system, and who claim disability therefrom. Industrial physicians will find the volume invaluable. Written as it is, in a very readable and entertaining style, with numerous short clinical cases histories to illustrate the writer's points, considerable portions of the book will prove of real help and lasting benefit to jurists and attorneys as well. It is a welcome addition to the literature of Industrial Medicine and Surgery.

As Orpheus led Eurydice from the Labyrinthine Shades of Darkness into the bright light of a better world, so does the author lead the physician dealing with industrial and posttraumatic cases, from deep perplexities to a clear understanding of the complex problems arising from the sincere attempt at proper interpretation and determination of the effects of trauma to the nervous system.

J. M. M.

New Books.

The following are recent acquisitions to the Library of the Medical College of Virginia and are available to our readers, the only cost being return postage:

Schmidt, C. L. A.—Addendum to the chemistry of the amino acids and proteins.

Scott, F. G. L.—Morphine habit and its painless treatment. 2nd ed.

Skinner, Edward Fretson—Outline of medical psychology.

Smith, Philip E.—Bailey's textbook of histology.

Snapper, Isidore—Medical clinics on bone diseases; a text and atlas.

Stieglitz, Edward J.—Report of a survey of active studies in gerontology.

Strecker, Appel and Appel—Discovering ourselves.

Stuhlman, Otto—Introduction to biophysics.

Sumner and Somers—Chemistry and methods of enzymes.

Taylor, F. Sherwood—The conquest of bacteria: From Salvarsan to sulphapyridine.

Todd & Sanford—Laboratory diagnosis. 10th ed.

Vernon, H. M.—Hours of work and their influence on health and efficiency.

Wolff, Charlotte—The human hand.

Wood, L. N.—Walter Reed, doctor in uniform.

The School-Child's Breakfast.

Many a child is scolded for dullness when he should be treated for undernourishment. In hundreds of homes a "continental" breakfast of a roll and coffee is the rule. If, day after day, a child breaks the night's fast of twelve hours on this scant fare, small wonder that he is listless, nervous, or stupid at school. A happy solution to the problem is Pablum. Mead-Johnson's Pablum furnishes protective factors especially needed by the school-child —especially calcium, iron and the vitamin B complex. The ease with which Pablum can be prepared enlists the mother's cooperation in serving a nutritious breakfast. This palatable cereal requires no further cooking and can be prepared simply by adding milk or water of any desired temperature.

PROCEEDINGS
MEDICAL SOCIETY OF VIRGINIA
ANNUAL MEETING
October 25, 26, 27, 1943
Roanoke, Virginia

SCIENTIFIC SESSIONS
Monday Afternoon, October 25

The Medical Society of Virginia held its annual convention in the city of Roanoke, at the Hotel Roanoke, the first scientific session convening in the ballroom of the hotel on Monday afternoon, October 25, 1943. The President of the Society, Dr. John M. Emmett of Clifton Forge, presided and called the meeting to order at two-thirty o'clock.

Dr. William Bickers, of Richmond, read his paper entitled "Functional Uterine Bleeding" (illustrated with lantern slides); and this was discussed by Drs. F. O. Plukett, Lynchburg; R. E. Feagans, Fairfax; and Eugene L. Lowenberg, of Norfolk; and by Dr. Bickers in closing.

Dr. Charles Stanley White, of Washington, D. C., read his paper entitled "Demerol, A Substitute for Morphine in Surgical Practice", which was discussed by Dr. H. H. Ware, Jr., of Richmond, and Dr. Richard Mason of The Plains, and in closing by Dr. White.

The President called for the paper of Dr. M. O. Burke, Richmond, entitled "Medical Progress during the Last Sixty Years", stating that he had understood that Dr. Burke would probably be unable to attend the meeting. Dr. Burke was absent. President Emmett then called for the paper of Dr. Julian R. Beckwith, of Clifton Forge, on "The Medical Treatment of Pulmonary Embolism", which was on the program for the last session on Wednesday morning. The President stated that Dr. Beckwith had been called into active service with the armed forces, and the paper was read by Dr. J. Morrison Hutcheson, of Richmond. It was discussed by Dr. H. B. Mulholland, of Charlottesville, and Dr. Eugene L. Lowenberg, of Norfolk, and in closing by Dr. Hutcheson. (Paper illustrated by lantern slides.)

Dr. Charles J. Frankel, of University, read his paper entitled "The Kenny Treatment for Infantile Paralysis," which was discussed by Dr. Robert V. Funsten, Charlottesville, and in closing by Dr. Frankel.

Dr. David C. Wilson, Charlottesville, read his paper on "The Treatment of Alcoholic Addiction", which was discussed by Dr. R. Finley Gayle, of Richmond. (No closing discussion.)

The program having been completed, the Society adjourned at four-fifty o'clock p. m.

Monday Evening Session

The first general meeting of the Society was held on Monday evening, October 25, 1943, in the ballroom of the Hotel Roanoke and was called to order at eight-ten o'clock p. m. by Dr. John O. Boyd, Roanoke, General Chairman of the Committee on Arrangements.

The invocation was said by the Reverend R. A. Lapsley, Jr., D. D., Pastor of the First Presbyterian Church, Roanoke.

Chairman Boyd presented the President of the Society, Dr. John Morehead Emmett, of Clifton Forge, who read his President's Address entitled "Our Responsibilities to Organized Medicine".

In the absence of Dr. J. Bolling Jones, Petersburg, Chairman of the Membership Committee, and of the other members of that committee, the President read the following names of members who had died since the last meeting, after which the assemblage stood in silence for a moment in respect to their memory.

MEMBERS WHOSE DEATHS HAVE BEEN REPORTED SINCE 1942 MEETING

Dr. Edwin Willis Twyman, Twymans Mill, September 15, 1942.
Dr. John F. Armentrout, Roanoke, September 28, 1942.
Dr. Achilles Douglas Tyree, Clifton Forge, November 12, 1942.
Dr. John Paulett Clark, Lynchburg, November 9, 1942.
Dr. Amos DeRussia Wood, Bluefield, W. Va., September 14, 1942.
Dr. Leverett Saltanstall Early, Petersburg, December 22, 1942.
Dr. John Edward Knight Flannagan, Marion, December 1. 1942.
Dr. George Hobson Rose, Zanoni, July 7, 1942.
Dr. Don Preston Peters, Lynchburg, January 20, 1943.
Dr. Henry Sycle Stern, Richmond, December 24, 1942.
Dr. Robert Minor Wiley, Salem, January 5, 1943.
Dr. William Leslie Davenport, Amelia, December 22, 1942.
Dr. Marshall John Payne, Staunton, February 11, 1943.
Dr. J. Richard Williams, Richmond, February 18, 1943.
Dr. Clifton Meredith Miller, Richmond, February 26, 1943.
Dr. Hawes Campbell, Enfield, February 23, 1943.
Dr. Henry Taylor Miller, Washington, D. C., February 7, 1943.
Dr. Benjamin Hughes Gray, Richmond, April 15, 1943.
Dr. John Edward Loyd, Natural Bridge Station, March 5, 1943.
Dr. William Meade Burwell, Chincoteague, April 2, 1943.
Dr. William Mercer Sprigg, Washington, D. C., March 6, 1943.
Dr. Edgar Williams Young, Petersburg, May 21, 1943.
Dr. Archie Clay Monroe, Richmond, May 21, 1943.
Dr. William Townes Wimbish, Petersburg, June 4, 1943.
Dr. William Reese Williams, Richlands, July 17, 1943.
Dr. Adam McClintic Byrd, Bluefield, W. Va., July 4, 1943.
Dr. Thomas Demoval Armistead, Roanoke, August 7, 1943.
Dr. Rawley Harrison Fuller, South Boston, July 23, 1943.
Dr. John Blair Fitts, Richmond, August 19, 1943.
Dr. Ralph Waddell Brown, Roanoke, August 9, 1943.
Dr. James Oscar Meade, Mendota, July 17, 1943.
Dr. Samuel A. Riddick, Norfolk, September 9, 1943.
Dr. Wright Clarkson, Petersburg, October 17, 1943.

President Emmett introduced Brigadier General C. C.

Hillman of the United States Army Medical Corps, an invited guest, and General Hillman read his paper entitled "Medical Operations in the Pacific Theatres."

President Emmett expressed the thanks of the Society to General Hillman and the Medical Corps of the Army. The program having been completed, the evening session then adjourned, at nine-thirty o'clock p. m.

Tuesday Morning, October 26

The Society met on Tuesday morning in the Hotel Roanoke ballroom with Vice-President W. L. Powell, M. D., of Roanoke, presiding, and was called to order at nine-forty-five o'clock a. m.

Dr. Ernest L. Copley, Richmond, read his paper entitled "Agranulocytic Angina—A Drug Hazard" (illustrated by lantern slides), which was discussed by Drs. William B. Porter and Paul D. Camp, both of Richmond, and in closing by Dr. Copley.

Dr. Frank S. Johns, Richmond, read his paper on "The Treatment of New Growths at the Rectosigmoid" (illustrated by lantern slides). This was discussed by Dr. Alfred P. Jones, Roanoke, and by Dr. Johns in closing.

Dr. C. L. Harrell, Norfolk, read his paper entitled "Tuberculosis in the Aged" (illustrated by lantern slides), and this was discussed by Dr. Nicholas G. Wilson, Norfolk; Dr. R. L. Raiford, Franklin; Dr. B. B. Bagby, Jr., Richmond; and by Dr. Harrell in closing.

Lieutenant Colonel Ernest T. Trice, M. C., Richmond, read his paper entitled "The Continuance of Symptoms after Surgery of the Biliary Tract" (with lantern slide illustrations), which was discussed by Dr. T. N. Barnett, Richmond; Dr. Hugh H. Trout, Roanoke; Dr. Frank S. Johns, Richmond; and in closing by Lieutenant Colonel Trice.

At this time President Emmett took the chair.

Dr. Eugene L. Lowenberg, Norfolk, read his paper entitled "Femoral Vein Ligation in the Treatment of Pulmonary Embolism Due to Femoral Thrombophlebitis" (illustrated by lantern slides). This paper was discussed by Dr. Hugh H. Trout, Roanoke; Dr. P. B. Parsons, Norfolk; Dr. J. Gordon Rennie, Pulaski; and by Dr. Lowenberg in closing.

The last paper on the program for the morning session, that of Dr. Randolph H. Hoge, Richmond, on "Pelvic Pain: Its Anatomical and Surgical Aspects in the Gynecologic Patient" (with lantern-slide illustrations), was read by Dr. Hoge and was discussed by Dr. William B. Porter, Richmond. (No closing discussion.)

The program having been completed, the morning session was adjourned at one o'clock p. m.

Tuesday Afternoon Session

The Society reconvened in the ballroom of the Hotel Roanoke and was called to order at 2:40 o'clock p. m. by the President, Dr. Emmett.

Dr. M. L. Dreyfuss, Clifton Forge, read his paper entitled "The Diagnostic Value and the Technique of the Aspiration Biopsy of Sternal Marrow" (illustrated by lantern slides). This was discussed by Dr. Wyndham B. Blanton, Richmond, and Dr. William B. Porter, Richmond, and in closing by Dr. Dreyfuss.

Dr. Harry H. Henderson, Richmond, read his paper entitled "Rickettsial Diseases in Virginia" (with lantern slides), which was discussed by Dr. H. B. Mulholland, Charlottesville, and by the author in closing.

Dr. William R. Jordan, of Richmond, read his paper on "Diabetic Coma", which was discussed by Dr. Blanton P. Seward, Roanoke, Dr. R. B. Grinnan, Jr., Norfolk, and Dr. H. B. Mulholland, Charlottesville, and in closing by Dr. Jordan.

The paper of Drs. Dean B. Cole, L. James Buis, and Walter L. Nalls, Maj. M. C., Richmond, entitled "Asthmatic Atelectasis Simulating Pneumonia" (illustrated by lantern slides), was read by Dr. Edgar C. Harper, Richmond, in the absence of Dr. Cole. This was discussed by Dr. W. Ambrose McGee, Richmond; Dr. Wyndham B. Blanton, Richmond; and Dr. Porter P. Vinson, Richmond. Dr. Harper closed the discussion.

At this time President Emmett introduced Mrs. Blanton P. Seward, of Roanoke. Mrs. Seward, on behalf of the Medical and Surgical Relief Committee of America, presented to Commander H. V. Stroupe, District Coast Guard Medical Officer, Norfolk, Va., ten portable medical kits for use on patrol boats of the Fifth District of the United States Coast Guard, stating that these made a total of thirty such kits which had been supplied to this District.

After some announcements in regard to coming features of the program, the afternoon session adjourned, at four-fifteen o'clock p. m.

Banquet Session
Tuesday, October 26

On Tuesday evening, October 26, the annual dinner of the Society was held in the ballroom of the Hotel Roanoke, following a cocktail party. The chairman in charge, Dr. A. M. Groseclose, presented guests at the speaker's table.

Following the dinner, President Emmett introduced Captain Don S. Knowlton, (MC) USNR, an invited guest of the Society, who spoke on the subject, "Medical Men in the Solomons".

A floor show then followed.

Wednesday Morning, October 27

The closing session of the 1943 meeting of the Medical Society of Virginia was held on Wednesday morning, October 27, in the ballroom of the Hotel Roanoke, beginning at nine-forty-five o'clock. President J. M. Emmett presided.

Dr. Julian L. Rawls, Norfolk, read his paper entitled "Acute Surgical Conditions Complicating Malignancy", which was discussed by Dr. Joseph D. Collins, Portsmouth. (No closing discussion.)

President Emmett introduced Captain John Q. Owsley, Medical Corps, United States Navy, one of the invited guests of the Society. Captain Owsley read a paper on "Medical Aspects of Aircraft Carrier Warfare."

The paper of Drs. H. B. Haag and Paul S. Larson,

Richmond, entitled "Recent Advances in the Pharmacology of Nicotine" (illustrated by lantern slides), was read by Dr. Haag and was discussed by Dr. Douglas G. Chapman, of Richmond. Dr. Haag read the discussion of Lieutenant Commander Emil Bogen, MC, USNR, who could not be present, and then closed the discussion.

The paper of Drs. William B. McIlwaine and Leta J. White, of Petersburg, entitled "Reports and Observations on Some Three Hundred Cases of Whooping Cough", was read by Dr. McIlwaine and was discussed by Dr. J. B. Stone, of Richmond. (No closing discussion.)

The last paper on the program, that of Dr. Everett Idris Evans, of Richmond, on "Plastic Surgery in Severe Burns" (illustrated by lantern slides), was read by the author. This was discussed by Lieutenant Commander Arthur J. Mourot, MC, USNR, of the Norfolk Naval Hospital, with Dr. Evans closing the discussion.

* * * * *

Installation of New President

PRESIDENT EMMETT: This brings us to a very important part of our meeting, which is the induction in office of our president for the next year.

I want to take this occasion to thank you again for the honor you have bestowed upon me, for the fine help you have given me, and for the cooperative spirit manifested in our committee work. I take advantage of this occasion, also, to thank Miss Edwards and her office force for the splendid spirit they have shown and the intelligent direction she has given me in the operation of the affairs of the Society during the past year. I do not need to commend Miss Edwards to the incoming president, because he has had long years of experience in working with her.

In the selection of your president for next year, you have used wise judgment, I am sure. There is no man among the personnel of the Society who is better qualified to lead us in this critical and uncertain time, and it is a pleasure to me to know that the affairs of the Society will be in such safe hands during the coming year.

I ask two of the Past Presidents of our Society, Colonel Walter Martin and Dr. Hugh H. Trout, to escort our incoming President to the platform.

(Colonel Martin and Dr. Trout escorted Dr. Bowyer to the speakers' platform.)

Members of the Society, I present to you Dr. Claude Bernard Bowyer, your President for the next year.

Dr. Bowyer then accepted office with appropriate remarks. (These appear under "President's Message" in this issue of the MONTHLY.)

Before closing, Dr. Bowyer announced names of chairmen of Standing Committees and stated that the full list of committees would be published in the issue of the MONTHLY carrying the minutes of this meeting. (These follow the minutes on page 633.)

There being no further business, the meeting then adjourned *sine die*, at 12:30 o'clock.

BUSINESS SESSIONS

Council

October 25, 1943

The annual meeting of the Council was held at the Hotel Roanoke, Roanoke, on October 25 at 9:30 A. M., with Dr. J. M. Emmett, President, presiding. Others in attendance were Dr. C. B. Bowyer, President-Elect; Drs. W. L. Powell and W. R. Payne, Vice-Presidents; Drs. Julian L. Rawls, J. M. Hutcheson, J. D. Hamner, W. C. Akers, J. J. Giesen, A. F. Robertson, Jr., and H. B. Mulholland, Councilors; Dr. M. P. Rucker, Editor of the VIRGINIA MEDICAL MONTHLY; Dr. I. C. Riggin, State Health Commissioner; and Dr. Wyndham B. Blanton.

The minutes of the two meetings of the Council since the last annual session were approved as published in the MONTHLY.

The next matter to be considered was that of the budget and this was explained by Drs. Hutcheson and Rawls:

BUDGET—OCTOBER 1, 1943—SEPTEMBER 30, 1944

MEDICAL SOCIETY OF VIRGINIA

Salaries	$ 2,880.00
Rent and Phone	365.00
Stationery and Office Supplies	75.00
Repairs and Replacements	40.00
Postage	225.00
Audit Fee	30.00
Social Security Tax	30.00
Miscellaneous	25.00
President's Expense	100.00
President-Elect's Expense	50.00
Councilors' and Officers' Expense	75.00
Delegates to A.M.A.	100.00
Convention Expense	600.00
Scientific Exhibits	350.00
Dept. Clinical and Medical Education	600.00
Medical Economics	75.00
Walter Reed Commission	75.00
Child Welfare	10.00
Maternal Health	20.00
Cancer Control	20.00
War Participation	75.00
Industrial Health	20.00
	$ 5,840.00

VIRGINIA MEDICAL MONTHLY

Salaries	$ 2,880.00
Rent and Phone	365.00
Preparation of Journal	6,500.00
Stationery and Supplies	35.00
Repairs and Replacements	40.00
Office Postage	45.00
Audit Fee	30.00
Miscellaneous	20.00
Social Security Tax	30.00
	$ 9,945.00

It was stated that an appropriation had not been included for the use of the Committee to Study the Coroner

Situation, and Dr. Wyndham Blanton, chairman, had been asked to attend and tell something of the work of the Committee and of its financial needs. He reported much progress had been made in the plan to abolish the present system of coroners in Virginia and put it under the Medical Examiner plan, but he felt the Committee would need several hundred dollars to complete the work, which includes legal assistance. Dr. Rawls said that Dr. Blanton had already paid $28.28 for the traveling expenses of Dr. Maldeis of Baltimore who had given a great deal of help to the Committee and moved that he be reimbursed for this amount, this to be taken out of the Legislative Fund. This was approved, after which Dr. Robertson moved that the Committee be allowed as much as $500.00 if needed, this likewise to come out of the Legislative Fund. Seconded and carried. Dr. Blanton's report was approved.

In addition to the amount allowed in the budget, a request was presented from the Department of Clinical and Medical Education for an appropriation of $1,500-$2,500 a year for a two-year period in support of the program for Cancel Control which the Department expects to put on after the war. Dr. Emmett felt it unwise to commit the Society to a definite appropriation at this time and thought action should be postponed until such time as it is known what other funds will be available. Dr. Mulholland stated that in trying to secure funds from a foundation, it will be necessary to know what appropriation the Society would make. After discussion, however, Dr. Rawls moved that action on this be deferred for one year and that the matter be reviewed again at the next annual meeting. This was seconded by Dr. Mulholland and carried.

The budget was then approved to be presented to the House of Delegates.

Dr. Rawls said he had been advised that there was a good amount in the savings accounts and as the rate of interest was quite low and for patriotic reasons, he moved that the savings accounts in the Morris Plan Bank and Southern Bank and Trust Company be drawn down to about $1,000 each, the money to be invested in War Bonds after December 1. This was seconded and carried.

A question which came up for discussion was the fact that in Virginia there is no requirement for registration of any kind governing hospitals. It was felt that there should be some registration or licensing and it was suggested that the Legislative Committee be empowered to draft a suitable bill requiring them to be licensed. At the present there is no way to prevent any hospital being set up and there is no means of inspecting them to keep out illegal practices. Dr. Akers said there are a great many small hospitals that are perfectly ethical which do a great deal of good in the State, but the requirements of the law might necessitate some of these being put out of business for lack of certain equipment, etc. If legislation could be passed which would not affect the ethical ones, he was in favor of it. Dr. Rawls then moved that the Legislative Committee be instructed to confer with the State Health Department and with some of the small hospitals now operating in the State and draw up a suitable bill. Seconded and carried.

Dr. Riggin called attention to the fact that the work of the State Health Department had been very much hampered not only because they had lost personnel to the Services but that they were unable to pay salaries in keeping with those in other states and said he had asked for an increase in the budget for this as well as other purposes. He was bringing this to the attention of the Council because he thought it well for the doctors to know what the State Health Department is facing.

Dr. Emmett said he did not feel that the medical profession was in exact unanimity of thought in regard to medical legislation and if the doctors could work as a body they would have more influence in curbing objectionable legislation. He felt that the matter was so serious it might affect the private practice of medicine and recommended that a permanent committee of three should be appointed to keep themselves posted on this subject and to cooperate with other state and national medical agencies in the improvement of the health of the people and to maintain essential and cordial relations necessary for the medical profession. Since including this in his address to be presented at the evening session, the Secretary had advised him that the Council on Medical Service and Public Relations of the American Medical Association had just suggested that such a committee be appointed in the various state associations. This was thought an excellent idea and it was moved and carried that the Council approve the formation of such a committee.

Dr. Rawls stated he had learned with regret of the death of Dr. Wright Clarkson and moved that the Secretary be instructed to write Mrs. Clarkson expressing the sympathy of the Council.

Adjournment followed.

House of Delegates
October 25, 1943

The first session of the House of Delegates was held at the Hotel Roanoke, Roanoke, at 11:30 A. M., October 25, with the President, Dr. J. M. Emmett, presiding.

A quorum being present, the minutes of the last session, as published in the December 1942 issue of the MONTHLY, were approved.

The first business was the consideration of Committee reports which had been published in the October 1943 MONTHLY.

Delegates to the American Medical Association (page 516). Accepted.

Publication and Program (pages 516-17). Accepted.

Scientific Exhibits (page 517). Accepted.

Department of Clinical and Medical Education (pages 517-18). Dr. Lehman called attention to that part of the report which referred to the proposed postgraduate course on Cancer Control. Dr. Emmett stated that the Council had discussed this matter and is in sympathy with it but moved that action be deferred on

this for one year. This was agreeable to Dr. Lehman and the report was accepted.

Legislation (pages 518-19). Dr. Johns, chairman, said there had apparently been a lack of interest on the part of the members with regard to the legislative work and he hoped they would give more support to the new chairman of this committee. Several of the members told of the interest of the doctors in their communities and of the promise of legislators to uphold the Medical Practice Act. Dr. Preston stated that Virginia has an excellent Medical Practice Act but there are points which need clarification. Following a general discussion, Dr. Moncure moved that it is the sense of this body that they oppose the lowering of the standards of the healing arts and unequivocally oppose allowing anyone to practice the healing arts in Virginia without passing a regular examination. Dr. W. B. Porter moved, as a substitute, that a committee be appointed to draft suitable resolutions in regard to this matter to be presented at the next meeting of this body. Seconded and carried. Dr. Emmett then appointed Drs. Moncure, Johns, Preston, Peple, and P. W. Boyd as the members of this committee.

Membership (page 519). Adopted.

Advisory Committee to the Woman's Auxiliary (page 519). Accepted. Following this, the annual report was received from the President of the Auxiliary and ordered to be published in the minutes.

REPORT

OCTOBER 1942—OCTOBER 1943

As we faced the year that is just ending, one wondered how well the County Auxiliaries would be able to function, particularly in sections in which the members were so widely separated. But, in spite of transportation difficulties which caused, in some sections, curtailment of routine meetings, the spirit of the work has been kept alive and some worthwhile things have been accomplished.

Special effort has been made to keep in touch with our members who are away because their husbands are in the service, also to make welcome the strangers whose husbands are stationed at near-by military posts.

Reports indicate that 90 per cent of the members are participating in war activities and buying war bonds, many assuming positions of leadership.

Diversified activities in the nine auxiliaries are as follows:

Honor Roll of the men in the Armed Forces presented to the local medical society.

Furnishing doctors' lounge in hospital.

Responsibility of checking and assisting in the distribution of equipment of the Casualty Stations (Norfolk).

Trying to help inform lay organizations about Cancer Control.

Through our Legislative Chairman, helping inform lay groups about pending legislation, particularly Wagner Bill 1161.

Four incubators given to hospital.

Fifty dollar scholarship given to student nurse.

Contribution to Diagnostic Tumor Clinic.

We try to promote the sale of the *Hygeia* magazine; some copies are placed in public libraries, schools, etc.

Members are sent Birthday Cards, reminding them of yearly health examinations.

We appreciate the cooperation of the Advisory Committee.

Respectfully submitted,

REBECCA S. ROGERS
(MRS. H. W. ROGERS),
President.

Maternal Health (pages 519-20). Accepted.

Child Welfare (pages 520-2). Dr. Wilson, chairman, gave the following supplement, to be inserted after the paragraph starting "The Commission for the Blind" (page 521, column 1): The Virginia School for the Deaf and Blind. A recreational building (authorized by the 1942 Legislature and funds provided conditionally), a dormitory for the larger boys of the School; a vocational building to house all shops and household arts training activities; a new infirmary with adequate nursing staff and a full-time medical officer. The report with suplement was then adopted.

Dr. J. M. Hutcheson then presented the budget which had been adopted by the Council and this was approved.

Walter Reed Commission (page 522). Adopted.

Health Division of the Virginia Conference of Social Work (pages 522-3). This was adopted with its recommendation that the Committee be discharged.

Pneumonia Commission (pages 523-5). Upon request of Dr. Blanton, chairman, Dr. H. H. Henderson of the State Health Department reviewed the work of the Commission, following which the report was adopted with the recommendation that the committee be discharged.

At this time a recess was taken that the delegates from the various districts might name the members of the Nominating Committee. These were selected as follows:

1st—Dr. Lee S. Liggan.
2nd—Dr. N. F. Rodman.
3rd—Dr. E. L. Flanagan.
4th—Dr. J. L. Hamner.
5th—Dr. W. A. Porter.
6th—Dr. George Hurt.
7th—Dr. Guy Fisher.
8th—Dr. Percy Harris.
9th—Dr. R. D. Campbell.

State Board of Nurses' Examiners (page 525). The chairman, Dr. Peple, presented the following letter which he had received from Miss Josephine McLeod, secretary of the State Board of Nurse Examiners, following which the report was adopted:

OCTOBER 9, 1943.

MY DEAR DR. PEPLE:

As a matter of record, I am writing to say that the State Board of Nurse Examiners has not been entirely idle this past year, as you may well imagine. Several of us, as you will recall, have had conferences with you from time to time relative to the accelerated plan that all Schools of Nursing were requested by our American Nurses' Association to adopt for our Schools of Nursing in order to fall in line with the Government request for more nurses for the Armed Forces. These requests have come so rapidly that it has certainly kept us all busy. You are familiar with many of the details of these various plans because St. Luke's has participated in the various movements.

It is a pleasure to say that even though the doctors in the State never have had so many worries, nor have they ever been so overworked as during the past year, yet not one in any section has refused to give us all the assistance that we have asked for in conducting the various classes in which we needed their help so much.

The Government is calling for more graduates all the time for the Armed Forces. Through this office and other nursing committees in the State, we are urging more applicants to go into the nursing profession. We still have plenty of work ahead of us.

Thanking you and your Committee for your continued valued assistance, and with all good wishes, I am

Cordially yours,

JOSEPHINE MCLEOD, R.N.,
Secretary-Treasurer.

Syphilis Control (page 525). Dr. Kimbrough, chairman, stated that he had attended the meeting of the newly-formed Virginia Social Hygiene Council the previous week. The chairman had asked him to present to the Society the fact that some legislative proposals might come up at the General Assembly and it would be valuable to have them cleared with the Society. As the possible proposals were so indefinite at the present time, it was moved and carried that the Syphilis Control Committee be given the authority to represent the Society on matters pertaining to venereal disease that may come before the next General Assembly.

Tuberculosis (page 525). Adopted.

Advisory to State Department of Health (page 527). Adopted with recommendation that committee be discontinued.

Cancer (page 527). Adopted.

Industrial Health (page 527). Adopted.

Coordination of Medicine, Dentistry, Pharmacy and Nursing (page 527). Adopted.

Health Museum (page 528). Adopted.

Clinical Laboratories (page 528). Accepted.

Intern Distribution (page 528). Dr. Harrell, a member of the committee, moved that a similar committee be continued. This was carried and the report accepted.

Delegate to Medical Society of the State of North Carolina (page 528). This report was accepted and it was stated that that organization had sent the following delegates to this meeting:

Dr. W. A. Peters, Elizabeth City.
Dr. H. B. Ivey, Goldsboro.
Dr. Leroy J. Butler, Winston-Salem.
Dr. Moir S. Martin, Mount Airy.

Under new business, Dr. C. L. Harrell presented the following resolution:

Some of you may know, but I am sure all of you are not familiar with the excellent work being done on culturing tubercle bacilli in the laboratory at Catawba Sanatorium bv Mr. A. W. Bengtson.

Mr. A. W. Bengtson was sent to Catawba by one of us in 1915 as a patient. While on the cure he became interested in laboratory work and has remained there since. His results in the culture and growth of the tubercle bacillus on a specially prepared pea media probably surpasses any on record. He has put on display and demonstrated his work and results in the scientific exhibits before this Society and the Southern Medical Association for several years.

Mr. Bengtson reports that the average for eight years in culture work on sputum after repeated negatve microscopic examinations is 28.84 per cent positives. For the two years ending June 30, 1943, it was 31.16 per cent and 32.54 per cent for the first and second years respectively. Pleural effusions run higher, the average for eight years being 57.2 per cent.

This work and information has been of inestimable value to the medical profession in this state and should be given some recognition.

THEREFORE, BE IT RESOLVED that the Medical Society of Virginia in session at Roanoke, extend a vote of thanks to Mr. A. W. Bengtson for his untiring work done with the tubercle bacillus in the Catawba Sanatorium Laboratory, and that a copy of the resolution be published in the VIRGINIA MEDICAL MONTHLY, and a copy be sent to Mr. Bengtson.

C. L. HARRELL, M. D.
N. G. WILSON, M. D.

Dr. Trout felt that Dr. George B. Lawson's name should be added to this along with Mr. Bengtson on account of work they had done together. Adopted.

Dr. N. F. Rodman offered the following resolution which was adopted: Be it resolved that a Nutrition Committee be appointed with authority to represent the Medical Society of Virginia in the General Assembly on matters pertaining to foods and nutrition, this Committee to be composed of five members.

The meeting then adjourned until the following morning at 8:30.

October 26, 1943

The second meeting of the House of Delegates convened at 9:00 A. M., October 26, with Dr. Emmett, President, presiding.

Under reports brought forward from the first day, Dr. Blanton explained the background of the work of the Committee to Study the Coroner Situation. He stated that the Norfolk County Medical Society presented resolutions at Virginia Beach, following which the Committee was appointed. In presenting this to Legislature, a commission had been formed to study the subject, and the Committee had in turn been asked to draw up a suitable bill. He then read the following recommendations:

A Medical Examiner System for the State of Virginia

Suggestions submitted by the following Committee of the Medical Society of Virginia appointed to assist the Virginia Advisory Legislative Council in making the study and report authorized and directed by Senate Joint Resolution No. 22 of the General Assembly of 1942:

Wyndham B. Blanton, M. D., Chairman, Richmond.
J. Edwin Wood, Jr., M. D., Charlottesville.
J. Hamilton Scherer, M. D., Richmond.
Ernest G. Scott, M. D., Lynchburg.
Kenneth D. Graves, M. D., Roanoke.
M. B. Beecroft, M. D., Newport News.

SUGGESTIONS FOR A MEDICAL EXAMINER SYSTEM FOR THE STATE OF VIRGINIA

ABOLITION OF THE OFFICER OF CORONER

1. The office of coroner to be abolished.

2. Certain magisterial powers now exercised by coroners (holding inquests, etc.) to be transferred to the judicial

or law enforcement officers of the counties and cities, and certain administrative duties now performed by them (serving process, issuing warrants, etc.) to be transferred to sheriffs and to justices, respectively.

ESTABLISHMENT OF A MEDICAL EXAMINER SYSTEM

1. A Commission on Post Mortem Examinations to be established, to consist of five ex-officio members as follows:

The Attorney General.
The State Health Commissioner.
The Superintendent of State Police.
The Dean of the Medical School of the Medical College of Virginia.
The Dean of the Medical School of the University of Virginia.

The Commission to elect one of its members as Chairman and another Secretary. The members to serve without compensation, but to be paid actual expenses incurred in the performance of their duties. Regular meetings to be held at such times as may be determined by the Commission, and special meetings to be called at any time by any two members. Three members to constitute a quorum.

2. The Commission to have the following powers and duties:

(a) To appoint a Chief Medical Examiner and an Assistant Chief Medical Examiner for the State of Virginia, to serve for terms of three years each, and until their successors are appointed by the Commission and have qualified. Each such Examiner to be a skilled pathologist and eligible to be licensed as a Doctor of Medicine. The Chief Medical Examiner to receive a salary of $7,200.00 per year, and the Assistant Chief Medical Examiner to receive a salary not in excess of $6,500.00 per year.

(b) To employ qualified pathologists to make autopsies and perform other pathological and toxicological work deemed necessary or advisable by the Chief Medical Examiner or his Assistant, and to arrange for the use of existing laboratory facilities for such purpose where these are available. The Commission should prepare and submit to the Chief Medical Examiner a list of approved pathologists available for use in the several sections of the State.

(c) To establish and maintain in the City of Richmond, under the supervision of the Chief Medical Examiner, a laboratory having adequate professional and technical personnel, including a skilled pathologist, and adequate physical facilities for the conduct of toxicological and pathological examiners as required under the Act, and to provide the Chief Medical Examiner with such clerical assistance as may be required in the conduct of his office. The Commission to be authorized to contract with the Medical College of Virginia for the use of its laboratories and other technical facilities, and for space in one of its buildings as a central office for the Chief Medical Examiner and his Assistant. The Chief Medical Examiner and the Assistant Chief Medical Examiner to be available to the Medical College of Virginia and the Medical School of the University of Virginia for lectures on subjects closely related to their duties.

(d) To appoint one or more Deputy Medical Examiners in each county and city of the State, to serve for terms of three years each, and until their successors are appointed by the Commission and have qualified. Each such Deputy Examiner to be appointed from a list of two or more licensed Doctors of Medicine submitted by the Component Medical Society of the county or city in which such appointment is to be made, or of the district in which the said county or city is located. If no list of names is submitted by the Society the Commission to appoint such Deputy Examiner or Examiners from the licensed Medical Doctors of such county or city. In the event any Deputy Medical Examiner, because of illness or enforced absence or personal interest, is unable to serve in any particular case, he to have power to designate some other qualified Doctor of Medicine in his county or city to serve in his place.

SALARIES, FEES AND OTHER EXPENSES

1. The salaries of the Chief Medical Examiner, the Assistant Chief Medical Examiner, and the technical and clerical personnel in the central office and laboratory, the expenses of maintaining the central office and laboratory, the cost of pathological and toxicological services rendered away from the central laboratory, and the traveling and other expenses of the members of the Commission, the Medical Examiners and the personnel of the central office, to be paid by the State of Virginia. It is estimated that these expenditures will not exceed $40,000.00 per year.

2. The fees to the Deputy Medical Examiner for investigating deaths under the Act, estimated at not to exceed $10.00 in each case, to be paid by the county or city in which he serves.

PROCEDURE WHEN CERTAIN DEATHS OCCUR

1. Upon the death of any person from violence, or suddenly when in apparent health, or when unattended by a physician, or in prison, or in any suspicious manner, the Deputy Medical Examiner of the county or city in which such death occurs to be notified by the physician in attendance, by any law enforcement officer having knowledge thereof, or by any other person present.

2. Upon receipt of such notice the Deputy Examiner to take charge of the dead body, make inquiries regarding the cause and manner of death, reduce his findings to writing and promptly make a full report thereof to the Chief Medical Examiner on forms prescribed for such purpose, retaining one copy of such report for his own use and delivering another to the Commonwealth's Attorney of his county or city. If in the opinion of the Deputy Medical Examiner or of the Chief Medical Examiner or his Assistant it is necessary and in the interest of the public welfare that an autopsy be made, or if an autopsy is requested by the Commonwealth's Attorney, such autopsy to be made by the Chief Medical Examiner or his Assistant or by such competent pathologist as may be designated for the purpose. A full record

and report of the facts developed by the autopsy to be promptly made and filed with the Deputy Medical Examiner and in the office of the Chief Medical Examiner, and, if in the opinion of the Chief Medical Examiner or the Deputy Medical Examiner it is proper, or if requested by the Commonwealth's Attorney of the county or city where the death occurred or of the county or city where any injury contributing to or causing death was sustained, a copy of the report on the autopsy to be furnished such Commonwealth's Attorney.

3. After completion of the investigation, including the autopsy if one is made, the body to be turned over to the relatives or friends of the deceased person, if any, but if none, then to the Sheriff or other principal law enforcement officer of the county or city where death occurred for proper disposition. The expense incurred by such officer in the disposal of the dead body is to be borne by the county or city where death occurred if the deceased person had no known place of residence within the State, but if the deceased person was a resident of Virginia at the time of death then by the county or city of such residence.

Note: Appropriate provision should be made for the use of any property or estate of the deceased person in paying burial or other expenses incurred by the county or city in disposing of the dead body, with any surplus going to the literary fund of the State as now prescribed by law.

4. As the holding of inquests has been abandoned in many cities and counties it may be advisable to omit all provisions for these hearings under the Medical Examiner plan. However, if it is deemed advisable to retain this procedure, then the hearings should be had by the judicial or law enforcement officer of the county or city where death occurred, or of the county or city where any injury resulting in death was sustained, and not by the Deputy Medical Examiner of such county or city.

Records Admissible as Evidence

1. Reports of investigations made by the Medical Examiners, records and reports of autopsies made under the authority of the Act, and certified copies of any reports, photographs, laboratory findings and records in the office of the Chief Medical Examiner and of the Deputy Medical Examiners, to be admissible as evidence in any court or other proceeding.

Cremation Certificates Required

1. Before the body of any deceased person to be cremated, a Deputy Medical Examiner to certify that he has viewed the body and made personal inquiry into the cause and manner of death and is of the opinion that no further examination or judicial inquiry concerning the same is necessary. A fee of $. to be paid the Examiner by the person making application for such certificate before such cremation is had.

Certification of Death and Special Permits

1. Appropriate provisions to be made in the statutes for obtaining and furnishing certificates of death, burial permits, burial transit permits, and other like certificates and permits, and for co-operation with the local registrars of vital statistics and the Bureau of Vital Statistics in all related matters.

Dr. Rinker moved the adoption of these suggestions. Seconded and carried.

In connection with this, Dr. Blanton, chairman, presented the following resolutions:

WHEREAS, the special committee of the Medical Society of Virginia, appointed to assist the Virginia Advisory Legislative Council in a study of the advisability of abolishing the office of coroner in Virginia and substituting a system of medical examiners, has submitted to the Legislative Council a plan entitled "A Medical Examiner System for the State of Virginia", a copy of which is filed with the report of the said special committee and is now before this body for consideration; and,

WHEREAS, this Society recognizes the inadequancy of the present coroner system in Virginia and the need for changes in our statutes along the general lines suggested in the report of the said special committee, and desires to approve the recommendations of the committee and to endorse the suggested plan; now therefore,

BE IT RESOLVED by the Medical Society of Virginia in convention assembled at Roanoke, Virginia, as follows:

1. That it is the considered opinion of this Society that the office of coroner as now constituted in Virginia should be abolished, and that the magisterial powers and administrative duties now imposed upon or exercised by coroners should be transferred to certain judicial and law enforcement officers.

2. That there should be established in Virginia a Medical Examiner System under which persons trained in legal medicine and in pathological investigations will be available to make accurate and scientific determinations of the causes of deaths which occur under suspicious or unusual circumstances.

3. That in the opinion of this Society the suggestions for a Medical Examiner System for the State of Virginia embodied in the plan submitted to the Virginia Advisory Legislative Council and now before this body for consideration are sound and practical and constitute a working basis for legislation which will aid in the prevention and detection of crime and be in the interest of all our people.

4. That this Society respectfully calls upon the Virginia Advisory Legislative Council to recommend to the General Assembly of Virginia for passage appropriate bills putting into effect the general principles embodied in this plan, and urges upon the members of the Senate and the House of Delegates of Virginia the importance of enacting legislation for the accomplishment of this purpose.

BE IT FURTHER RESOLVED that a copy of these resolutions and of the plan submitted by our special committee be sent to the Governor of Virginia, the President of the Senate, the Speaker of the House of Delegates, the Chairman and Secretary of the Virginia Advisory Legislative

Council, and to the members of the Senate and of the House of Delegates of Virginia.

These were adopted.

Dr. Emmett then told of the permanent committee, or one to serve at least five years, which, in his President's Address, he had recommended to be appointed. He felt it should be the duty of this committee to acquire all information available with regard to the legislation concerning socialized medicine and disseminate it to the profession and to cooperate with certain state and national medical agencies. He felt a committee appointed from year to year would not be able to follow this through as would one appointed for at least five years. Dr. W. O. Bailey felt this was one of the most important subjects which had come up in the Society, and Dr. A. M. Showalter moved that such a committee be appointed by the incoming president. This was seconded. A good deal of discussion followed during which a delegate from the Patrick-Henry Medical Society read resolutions which were adopted:

At a regular meeting of the Patrick-Henry Medical Society held in Martinsville, Va., on October 8, 1943, the following resolutions were unanimously adopted:

WHEREAS, on the 3rd day of January 1943 a proposed amendment to the Social Security Act known as the Wagner Bill S. 1161 was introduced in the Senate and at the same time an identical measure H.R. 2861 was introduced in the House of Representatives; and

WHEREAS, in the opinion of this society, the enactment of this proposed legislation would utterly destroy the private practice of Medicine in America, and completely suppress the extensive individual research in the Art and Science of Medicine, and

WHEREAS, under our present regime of individuality and private practice, the Art and Science of Medicine has made discoveries, advancements and achievements during the past forty years which are unequaled in the annals of history for the relief and betterment of humanity;

BE IT RESOLVED by the Patrick-Henry Medical Society that this body go on record as condemning that portion of this proposed amendment to the Social Security Act, which deals with the Medical Program, in its entirety. That this body would consider the enactment of such legislation as a definite backward step in civilization; demoralizing and destroying the high ethical standards of the Medical Profession, which in turn would reflect upon our civilization as a whole. That such legislation would restrict the personal liberties of the individuals of the Medical Profession as well as the freedom of selection or choice of a family physician which is one phase of that priceless heritage handed down by our forefathers;

BE IT FURTHER RESOLVED that a copy of these resolutions be sent to the American Medical Association and presented to the Medical Society of Virginia with the recommendation that the American Medical Association and the Medical Society of Virginia do everything in their power to defeat this proposed legislation. That a copy of these resolutions be sent to each of our Senators and Congressmen with a similar recommendation, and that a copy be filed with the records of this Society.

Feeling that the public and the doctors need further education in regard to legislation affecting the practice of medicine, Dr. Showalter's motion for the appointment of this special committee was then adopted. A motion by Dr. R. L. Raiford that the resolutions of the Patrick-Henry Society be referred to the new committee was seconded and carried.

Dr. Emmett next called on Dr. Riggin, State Health Commissioner, who wished to make a statement as to the work of his department. He said they were very much hampered not only because they had lost personnel to the armed forces, to other states and industry, but on account of inadequate compensation; that Virginia had lagged considerably in paying the personnel of the State Health Department, but that they can get the personnel if the State is willing to pay as other states are doing. He proposes to present to the Legislature this year a budget in which he anticipates increasing compensations to his technically trained personnel and wished the approval of the Society. He said that about $1.00 of State money is being spent to $1.50 of Federal money, and it seemed that Virginia should be able to carry its own public health program. Dr. Showalter moved that the House of Delegates approve the request of Dr. Riggin that appropriations sufficient to maintain health be provided by the State, and also that an increase be provided for salaries of the technical and professional personnel commensurate with the qualifications and duties required. He further recommended that a copy of this motion be forwarded the Governor and his Budget Committee. This was seconded and carried.

Dr. Moncure, chairman, was then asked for the report of the committee appointed the previous day. He read the recommendations prepared by the committee. After discussion, these were adopted as follows:

MEMORANDUM TO WHICH CONSIDERATION IS INVITED AS RELATES TO THE PROPOSED LEGISLATION TOUCHING THE MEDICAL PRACTICE ACT

1. That no basic changes be made in the present act.
2. That certain ambiguities of the act be clarified and certain obsolescent portions be deleted.
3. That the present standard of education both preprofessional and professional be maintained and that this apply to all schools of practice, both sectarian and regular.
4. That consideration be given to the legality and practicability of incorporating an injunctive procedure as relates to individuals convicted of violation of the act who undertake to continue practice.
5. That the practice of osteopathy, chiropractic and naturopathy be clearly defined and that limitations of their practice as set out in Section 1618 of the Practice Act be incorporated in any changes which may be made.
6. That it be made definitely clear, as also set out in Section 1618, that there be no discrimination in the examination of practitioners of any sectarian school and that the only difference in the requirements as relates to qualifying in their branch of practice be that as relates to practice in the separate branch. Specifically
   (a) That such applicant be not required to take the examination upon materia medica, therapeutics, and practice of medicine.
   (b) That the act be clarified by providing that the Examining Board be authorized to invite a member of the sectarian school to which the applicant belongs to examine and grade the applicant upon his branch of practice, such grades to be averaged in with the remainder of the examination without discrimination.

7. That consideration be given to an authorization of the Legislative Committee in conjunction with its legal counsel to remodel the Practice Act in such a way as its judgment be advisable and to, if it be deemed proper, have such remodeled act completed and ready to introduce in the legislature in the event an opportune time presents itself.
8. That authority be given to the Legislative Committee, even after the bill has been taken up in the State Legislature, to make such changes as may be necessary to meet the situation.

The Nominating Committee then presented the following names as officers for the coming year:

President-Elect—Dr. H. B. Mulholland, University.
Vice-Presidents—Dr. J. O. Boyd, Roanoke.
Dr. H. A. Latane, Alexandria.
Dr. N. G. Wilson, Norfolk.

Executive Secretary-Treasurer—Miss Agnes V. Edwards, Richmond.

There being no further nominations, the slate was unanimously accepted.

The next order of business was the election of a delegate and alternate to the American Medical Association, and Drs. Walter B. Martin and Roshier W. Miller were named to succeed themselves as delegate and alternate, respectively. While the vote for delegates was being counted, Dr. E. P. Lehman, chairman of the Cancer Committee, presented the following motion which was adopted: That the House of Delegates of the Medical Society of Virginia approve the creation of a study commission by the General Assembly to consider a state program of cancer control.

The representatives from the odd-numbered districts were then asked to name the Councilors who had been selected for two years, and the members of the eighth district were asked to name a Councilor to fill the unexpired term for one year of Dr. Mulholland who had been named president-elect. These were as follows:

1st—Dr. Frank C. Pratt, Fredericksburg.
3rd—Dr. W. B. Porter, Richmond.
5th—Dr. W. C. Akers, Stuart.
7th—Dr. A. F. Robertson, Jr., Staunton.
8th—Dr. Percy Harris, Scottsville.
9th—Dr. F. H. Smith, Abingdon.

An invitation extended by the Richmond Academy of Medicine for the Society to hold its next annual meeting in Richmond was unanimously accepted.

Dr. Preston, secretary of the State Board of Medical Examiners, had advised that there was a vacancy to be filled on the Board due to the resignation of Dr. I. C. Harrison of the 5th District. Nominations for appointment to this position were called for and Dr. Beverley F. Eckles, Galax, was nominated, and the secretary was instructed to advise the Governor of this fact.

Following this, Dr. Moncure moved that a vote of thanks be extended to the Roanoke Academy of Medicine and the Hotel Roanoke for the splendid arrangements they had made for this meeting. Seconded and carried. The House then adjourned.

AGNES V. EDWARDS,
Secretary.

Approved:
J. M. EMMETT,
President.

Auditor's Report
October 1, 1942—September 30, 1943

THE OFFICERS AND COUNCILORS,
MEDICAL SOCIETY OF VIRGINIA,
RICHMOND, VIRGINIA.

GENTLEMEN:

We have made an examination of the books of account of the Medical Society of Virginia for its fiscal year ended September 30, 1943, and now present our report, consisting of the following financial statements and explanatory comments.

EXHIBITS		PAGES
"A"	Balance Sheet	5
"B"	Statement of Income and Expense	6-7
"C"	Receipts and Disbursements of Legislative Committee Special Fund	8

Comments

The financial condition of the Society at September 30, 1943, is set forth in the Balance Sheet, Exhibit "A", a summary of which is shown below, in comparison with that at September 30, 1942:

	9-30-43	9-30-42
ASSETS:		
Cash	$27,712.07	$23,985.60
Accounts Receivable	830.94	1,420.48
Investments—U. S. Bonds	6,336.00	2,597.00
TOTALS	$34,879.01	$28,003.08
LIABILITIES AND SURPLUS:		
Liabilities:		
Accounts Payable	$ 839.86	$ 665.71
Surplus:		
General Fund	25,033.99	22,690.73
Special Legislative Fund	9,005.16	4,646.64
TOTALS	$34,879.01	$28,003.08

The income and expenses of the General Fund for the fiscal year ended September 30, 1943 are shown in Exhibit "B", prepared on the cash receipts and disbursements basis. The operations for both the current and preceding year are given in condensed form below:

	YEAR ENDED	
	9-30-43	9-30-42
INCOME:		
Medical Society	$ 5,438.52	$ 5,765.79
Medical Monthly Publication	12,155.08	11,559.20
TOTALS	$17,593.60	$17,324.99
EXPENSES:		
Medical Society	$ 5,259.78	$ 4,940.68
Medical Monthly Publication	9,442.27	10,013.71
TOTALS	$14,702.05	$14,954.39
SURPLUS INCOME FOR YEAR	$ 2,891.55	$ 2,370.60

The receipts and disbursements of the Legislative Committee Special Fund, which are not included in the above tabulation, were as follows:

Receipts for the Year	$5,092.02
Disbursements for the Year	733.50
Excess of Receipts over Disbursements	$4,358.52
Cash Balance—October 1, 1942	4,646.64
Cash Balance—September 30, 1943	$9,005.16

The membership dues are $7.00 annually and the collections therefrom are apportioned in the books of account as follows:

For General Fund Expenses	$3.00
For Subscriptions to the Medical Journal	2.00
For Legislative Committee Expenses	2.00

The cash balances of the Society as of September 30, 1943 and names of the depositories were:

General Fund:		
First & Merchants National Bank	$10,075.93	
The Morris Plan Bank of Virginia	5,525.82	
Southern Bank & Trust Company	3,105.16	
		$18,706.91
Legislative Committee Special Fund:		
First & Merchants National Bank		9,005.16
TOTAL		$27,712.07

Investment in United States Savings Bonds as of September 30, 1943 was as follows:

DATE ACQUIRED	DATE OF MATURITY	COST	VALUE AT MATURITY	VALUE AT 9-30-43
2-1-36	2-1-46	$ 525.00	$ 700.00	$ 616.00
10-1-39	10-1-49	1,500.00	2,000.00	1,620.00
3-1-40	3-1-50	375.00	500.00	400.00
2-1-43	2-1-53	3,700.00	5,000.00	3,700.00
TOTALS		$6,100.00	$8,200.00	$6,336.00

Insurance protection in force was found to be:

Office Furniture and Fixtures	$1,000.00
Walter Reed Home, Belroi, Virginia	1,000.00
Fidelity Bond, Secretary-Treasurer	2,500.00

Accounts Receivable for membership dues and for advertising in the Medical Monthly publication are stated at collectible value as estimated by the executive Secretary-Treasurer.

All cash receipts of record were accounted for by bank deposits, and disbursements were evidenced by satisfactory vouchers. Balances on deposit at the close of the year were independently confirmed and securities owned were verified by inspection of the bonds on hand. The bookkeeping records were found to have been kept in accurate order for the year covered by our examination.

Respectfully submitted,

SHEPHERD, JACKSON & WIGGINS,
Certified Public Accountants.

Balance Sheet—September 30, 1943
Exhibit "A"

ASSETS

CASH:		
General Fund (Exhibit "B")	$18,706.91	
Special Fund (Exhibit "C")	9,005.16	
		$27,712.07
DUE FROM MEMBERS:		
(Estimated Collectible Value):		
1943 Dues— 50 @ $5.00 (General Fund)		250.00
ACCOUNTS RECEIVABLE:		
Virginia Medical Monthly for Advertising		580.94
SECURITIES:		
U. S. Savings Bonds—Current Value:		
Acquired Prior to October 1, 1942	$ 2,636.00	
Acquired February 2, 1943	3,700.00	6,336.00
TOTAL ASSETS		$34,879.01

LIABILITIES AND SURPLUS

ACCOUNTS PAYABLE:		
Preparation of Medical Journal—September, 1943 Issue	$ 472.52	
Programs and Office Supplies	166.94	
Social Security Tax	24.00	
Federal Withholding Tax	176.40	
		$ 839.86
RESERVE FOR LEGISLATIVE COMMITTEE SPECIAL FUND		9,005.16
SURPLUS—GENERAL FUND:		
Excess of Assets over Liabilities		25,033.99
TOTAL LIABILITIES AND SURPLUS		$34,879.01

Statement of Income and Expense
For Fiscal Year Ended September 30, 1943
Exhibit "B"

MEDICAL SOCIETY OF VIRGINIA DIVISION

		ACTUAL	BUDGET
INCOME:			
Membership Dues @ $3.00 each		$ 4,558.57	
Commercial Exhibits—Net Receipts		747.85	
Royalties on History of Medicine		62.95	
Interest on Savings Accounts (½)		69.15	
TOTAL		$ 5,438.52	
EXPENSES:			
Salaries (Apportioned):			
Secretary-Treasurer	$1,800.00		
Clerical Assistance	1,080.00		
		$ 2,880.00	$ 2,880.00
Office Rent and Telephone		362.04	365.00
Stationery and Office Supplies		41.76	75.00
Repairs and Replacements		1.45	40.00
Postage		167.39	225.00
Audit Fee (½)		30.00	30.00
Social Security Tax (½)		23.55	30.00
Miscellaneous Expense		20.33	25.00
Convention Expenses		401.30	610.00

Appropriation in Re Senate Bill No. 1161	81.45	81.45
President's Expense	6.50	100.00
President-Elect's Expense	28.00	50.00
Councilors' and Officers' Expenses	57.83	75.00
Delegates to A.M.A. Convention	53.08	100.00
Committee on Scientific Exhibits	216.80	350.00
Department of Clinical and Medical Education	230.70	600.00
Committee on Medical Economics	-----	75.00
Walter Reed Commission	18.00	75.00
Committee on Child Welfare	----	10.00
Committee on Maternal Health	5.00	20.00
Committee on Cancer	2.00	20.00
Committee on War Participation	630.00	630.00
Committee on Industrial Health	-----	20.00
Committee on Commercial Exhibits	2.60	-----
Committee on Medical Preparedness	-----	75.00
TOTALS	$ 5,259.78	$ 6,561.45
SURPLUS INCOME FOR YEAR	$ 178.74	

VIRGINIA MEDICAL MONTHLY DIVISION

		ACTUAL	BUDGET
INCOME:			
Advertising		$ 8,700.08	
Subscriptions:			
Membership Dues @ $2.00 each	$3,041.05		
Non-Members	344.80		
		3,385.85	
Interest on Savings Accounts (½)		69.15	
TOTAL		$12,155.08	
EXPENSES:			
Salaries (Apportioned):			
Secretary-Treasurer	$1,800.00		
Clerical Assistance	1,080.00		
		$ 2,880.00	$ 2,880.00
Preparation of Journal including Distribution Cost		6,059.00	6,500.00
Office Rent and Telephone		362.08	365.00
Stationery and Office Supplies		22.70	35.00
Repairs and Replacements		1.44	40.00
Office Postage		37.50	45.00
Audit Fee (½)		30.00	30.00
Social Security Tax (½)		23.55	30.00
Miscellaneous Expense		26.00	20.00
TOTALS		$ 9,442.27	$ 9,945.00
SURPLUS INCOME FOR YEAR		$ 2,712.81	

SUMMARY OF OPERATIONS

DIVISION	ACTUAL INCOME	ACTUAL EXPENSES	SURPLUS INCOME
Medical Society	$ 5,438.52	$ 5,259.78	$ 178.74
Medical Journal	12,155.08	9,442.27	2,712.81
TOTALS	$17,593.60	$14,702.05	$ 2,891.55

RECONCILIATION OF CASH BALANCE:

Balance—October 1, 1942		$19,338.96
Add: Surplus Income for Year	$ 2,891.55	
Federal Withholding Tax—Due to Collector of Internal Revenue	176.40	3,067.95
		$22,406.91
Deduct: U. S. Government Bonds Purchased		3,700.00
Balance—September 30, 1943		$18,706.91

Legislative Committee Special Fund—Receipts and Disbursements

For Fiscal Year Ended September 30, 1943
Exhibit "C"

BALANCE—OCTOBER 1, 1942		$ 4,646.64
RECEIPTS:		
Membership Dues @ $2.00 each	$ 3,031.00	
Voluntary Contributions	2,047.50	
Interest on Bank Balance	13.52	5,092.02
TOTAL		$ 9,738.66
DISBURSEMENTS:		
Expenses of Legislative Committee	$ 33.50	
Legal Services	700.00	733.50
BALANCE—SEPTEMBER 30, 1943		$ 9,005.16*

The following are committees appointed by Dr. Bowyer.

Standing Committees

(The numbers after names indicate length of term of office, as the By-Laws provide that new members of Standing Committees shall be named by the incoming President for terms of three years, except in the case of the Department of Clinical and Medical Education.)

PUBLICATION AND PROGRAM: M. P. Rucker, M.D. (2), Richmond, *Chairman;* J. Edwin Wood, Jr., M.D. (1), Charlottesville; Wyndham B. Blanton, M.D. (3), Richmond.

SCIENTIFIC EXHIBITS AND CLINICS: W. Ambrose McGee, M.D. (1), Richmond, *Chairman;* M. L. Dreyfuss, M.D. (2), Clifton Forge; McLemore Birdsong, M.D. (3), Charlottesville.

DEPARTMENT OF CLINICAL AND MEDICAL EDUCATION: J. M. Emmett, M.D., Clifton Forge, *Chairman;* George B. Zehmer, Charlottesville, *Executive Secretary;* I. C. Riggin, M.D., Richmond, State Health Commissioner; J. P. Gray, M.D., Richmond, Medical College of Virginia; Edwin P. Lehman, M.D., Charlottesville, University of Virginia; P. St. L. Moncure, M.D., Norfolk; Beverley R. Tucker, M.D., Richmond.

LEGISLATION: W. C. Caudill, M.D. (3), Pearisburg, *Chairman;* J. W. Preston, M.D. (3), Roanoke; W. L. Peple, M.D. (3), Richmond; F. S. Johns, M.D. (2), Richmond; G. Colbert Tyler, M.D. (2), Newport News; J. Morrison Hutcheson, M.D. (2), Richmond; C. D.

*Special Savings Account No. 15224, First & Merchants National Bank, Richmond, Virginia.

Nofsinger, M.D. (1), Roanoke; B. F. Eckles, M.D. (1), Galax; Dean B. Cole, M.D. (1), Richmond.

MEDICAL ECONOMICS: W. L. Powell, M.D. (3), Roanoke, *Chairman;* A. B. Graybeal, M.D. (3), Marion; C. L. Harshbarger, M.D. (2), Norton; H. A. Latane, M.D. (2), Alexandria; Frank C. Pratt, M.D. (1), Fredericksburg; A. B. Hodges, M.D. (1), Norfolk.

MEMBERSHIP: J. Bolling Jones, M.D. (2), Petersburg, *Chairman;* D. M. Kipps, M.D. (1), Front Royal; A. M. Showalter, M.D. (3), Christiansburg.

ETHICS: T. K. McKee, M.D. (1), Saltville, *Chairman;* R. L. Raiford, M.D. (2), Franklin; H. W. Bachman, M.D. (3), Bristol.

JUDICIAL: P. S. Smith, M.D. (3), Abingdon, *Chairman;* John O. Boyd, M.D. (2), Roanoke; Donald S. Daniel, M.D. (1), Richmond.

Special Committees

PUBLIC RELATIONS AND MEDICAL SERVICE: J. M. Emmett, M.D., Clifton Forge, *Chairman;* H. B. Mulholland, M.D., Charlottesville; I. C. Riggin, M.D., Richmond.

CHILD WELFARE: P. W. Miles, M.D., Danville, *Chairman;* R. H. DuBose, M.D., Roanoke; C. E. Conrad, M.D., Harrisonburg; T. R. Bowers, M.D., Bristol; Mary E. Johnston, M.D., Tazewell; E. C. Harper, M.D., Richmond; William T. Graham, M.D., Richmond.

MATERNAL HEALTH: T. J. Williams, M.D., Charlottesville, *Chairman;* C. J. Andrews, M.D., Norfolk; M. P. Rucker, M.D., Richmond; E. B. Kilby, M.D., Toano; A. M. Groseclose, M.D., Roanoke; J. A. Owen, M.D., Turbeville; A. L. Carson, Jr., M.D., Richmond.

WALTER REED COMMISSION: C. P. Jones, M.D., Newport News, *Chairman;* J. D. Clements, M.D., Ordinary; James W. Smith, M.D., Hayes Store.

TO CONFER WITH STATE BOARD OF NURSES' EXAMINERS: I. A. Bigger, M.D., Richmond, *Chairman;* C. B. Morton, M.D., Charlottesville; D. S. Divers, M.D., Pulaski; A. P. Jones, M.D., Roanoke; D. G. Chapman, M.D., Richmond; C. J. Andrews, M.D., Norfolk.

SYPHILIS CONTROL: W. W. S. Butler, M.D., Roanoke, *Chairman;* J. W. Love, M.D., Alexandria; D. C. Smith, M.D., Charlottesville; J. R. Blalock, M.D., Marion; R. W. Fowlkes, M.D., Richmond.

TUBERCULOSIS: J. B. Nicholls, M.D., Catawba Sanatorium, *Chairman;* C. L. Harrell, M.D., Norfolk; W. J. Ozlin, M.D., South Hill.

CANCER: E. P. Lehman, M.D., Charlottesville, *Chairman;* I. C. Riggin, M.D., Richmond; R. L. Payne, M.D., Norfolk; Fred Hodges, M.D., Richmond; R. P. Bell, M.D., Staunton; Hugh H. Trout, M.D., Roanoke; I. A. Bigger, M.D., Richmond; George Z. Williams, M.D., Richmond; George Cooper, Jr., M.D., Charlottesville.

INDUSTRIAL HEALTH: F. J. Wampler, M.D., Richmond, *Chairman;* G. C. Amory, M.D., Hilton Village; W. L. Weaver, M.D., Richmond; W. B. Barton, M.D., Stonega; H. U. Stephenson, M.D., Richmond; J. B. Porterfield, M.D., Richmond; R. D. Campbell, M.D., Saltville.

TO STUDY CORONER SITUATION: Wyndham B. Blanton, M.D., Richmond, *Chairman;* M. B. Beecroft, M.D., Newport News; Kenneth D. Graves, M.D., Roanoke; J. Edwin Wood, Jr., M.D., Charlottesville; E. G. Scott, M.D., Lynchburg; J. H. Scherer, M.D., Richmond; W. D. Kendig, M.D., Kenbridge; G. B. Setzler, M.D., Pennington Gap; G. C. Williams, M.D., Pearisburg; W. O. Bailey, M.D., Leesburg.

NUTRITION: Raymond Kimbrough, M.D., Norfolk, *Chairman;* J. P. Gray, M.D., Richmond; W. W. Waddell, M.D., Charlottesville; E. A. Harper, M.D., Lynchburg; A. L. Carson, Jr., M.D., Richmond.

Floral Eponym (10)

DARLINGTONIA CALIFORNICA—TORREY

WILIAM DARLINGTON (1782-1863) was born in Chester County, Pennsylvania, of English parentage. He graduated M. D. at the University of Pennsylvania in 1804 and after a voyage to India as ship's surgeon settled down to practice in West Chester. In addition to his practice he held many public offices. Nevertheless, he had time to botanize and published a book on the flora of Chester County. He was especially pleased when Professor DeCandolle of Geneva named a genus after him, but it was not sufficiently distinct. Another friend, Professor Torrey of New York, dedicated to him a finer plant of the order, Sarraceniaceae, growing in California, the California pitcher-plant.

VIRGINIA MEDICAL MONTHLY

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(Founded by Landon B. Edwards, M. D., April, 1874)

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The Roanoke Meeting

BY every count the 95th meeting of the Medical Society of Virginia, October 25, 26, and 27, was a great success. The people of Roanoke are naturally so hospitable, and the hotel accommodations are so adequate, that everyone had a good time. The headquarters hotel, the Hotel Roanoke, a magnificent hotel perfectly run, offers every convenience for a convention. Furthermore, it was a relief for many doctors to be out of a war area, if only for a few days. It seemed to be the common belief of the visitors that the Society should meet at Roanoke every year; certainly for the duration.

The attendance was extraordinarily good. Four hundred and four doctors registered, and more persons wanted tickets for the dinner on Tuesday than could be accommodated. The exhibits along Peacock Alley made a good show in itself. The scientific exhibits in a section of the Ballroom, while not as numerous as in previous years, were of high quality.

The program was varied. The papers were well presented and elicited full and enlightening discussions. There were surprisingly few absentees among the essayists and those named on the program to lead the discussions. One essayist did not come and neglected to send his paper. Another essayist had joined the Armed Forces, but his paper was read and fully discussed. Otherwise the scientific program went off according to schedule. The President's address on our responsibilities to organized medicine was especially well received. The only unfavorable criticism of the program that we have heard concerned the dinner speech. Many wanted to hear about the "Medical Men in the Solomons", the title announced in the program. They were surprised and disappointed when they heard, instead, a political speech.

The House of Delegates had very busy meetings as three important matters were

introduced in addition to the routine business. The Committee to study the Coroner situation in Virginia brought in a report endorsing the Medical Examiner System such as has been in operation in the State of Massachusetts and the City of New York for years. The most recent State to adopt such a plan is Maryland. The Committee has profited by the practical experiences of Massachusetts, New York City, and Maryland, and will present to the State Legislature what is considered a model law.

Possible legislation regulating the "healing arts" came in for considerable discussion. The State Legislature has a committee for the study of the "healing arts" and its report will be made public when the Legislature meets. There were rumors that there would be a majority and a minority report. Others said that the committee would have just one report. As no one knew just what the report of this committee would be, the discussion was quite lengthy, thus fulfilling the old adage that the less you know of a subject, the longer you talk.

The third matter was the creation of a long term committee whose function would be to cooperate with similar committees of other States and of the American Medical Association, and to keep the members of the Society informed about movements and legislation designed to control or abolish the practice of medicine. President Emmett stressed the need for such a committee and pictured the good that would result if such a committee functioned properly. Much of the force of the committee would be lost if its personnel were changed every year.

In this connection several members suggested to the Editor that the MONTHLY should have a department labeled "Correspondence" so that members could express their views on such subjects, or anything else that was not scientific medicine. The Editor wishes to announce that he will be only too glad to publish any such communications. The MONTHLY is the Society's Journal, and it is the Editor's business to serve and please the members.

Carrión's Disease

OF the curious diseases in the world this is a museum piece. Among its peculiarities may be mentioned its limited locale, its various clinical syndromes, its power of blood destruction, and its peculiar type of immunity. The very name is intriguing. Dr. Calderon Howe has written an excellent geographical account for the August (1943) *Scientific Monthly* and a comprehensive medical study for the *Archives of Internal Medicine,* (72:147, August 1943). Until quite recently it was confined to one country, Peru, and even in Peru it was found only in the semi-arid valleys between elevations of 800 and 3,000 meters. It is perfectly safe for the traveler to traverse these valleys in the daytime, but if he spends the night he most surely will contract the disease. This strict geographical limitation of the disease is no longer true, for in 1939 it was reported in Colombia and in 1940 in Ecuador. The vector of the disease is the wild sandfly, *Phlebotomus verrucarum,* a blood-sucking insect smaller than the mosquito. Only the female bites, and she does her work at night.

The disease occurs in several forms. The acute form, known as *Oroya fever,* is characterized by rapid blood destruction with fever. About 40 per cent of persons afflicted with this type die. During the construction of the railway from Lima to Oroya some 7,000 workmen died of the disease. Those who recover will almost certainly develop the chronic form of the disease with skin manifestations, i.e., *verruga peruana.* However, *verruga peruana* may appear without the preceding *Oroya fever.* It is characterized by bright cherry-red warts on the face and extremities which bleed profusely when tampered with. They disappear without leaving a trace. The skin

lesions may occur in the form of a few large, painful subcutaneous nodules, or small red nodules scattered profusely over the surface of the entire body. The eruption may last many months and is entirely benign. When uncomplicated by secondary infection, it is never fatal.

These two types were considered separate entities until 1885 when Daniel A. Carrión, a Peruvian medical student, inoculated himself with blood and tissue from a human *verruga* nodule. Nine days later he died of typical *Oroya fever*. The causative organism, *Bartonella bacilliformis,* was first described by Dr. Barton in 1905 in Lima. From 4 to 7 per cent of the natives carry this infection in their blood without manifesting any symptoms. An attack gives a permanent immunity. A second attack of *Oroya fever* is a great rarity, but subsequent attacks, *verruga peruana,* are not infrequent.

There is no specific treatment for bartonellosis and no known means of immunization. Vaccination with formaldehyde-treated suspension of Bartonella bacilliformis apparently protects against clinical manifestations of the disease, but does not prevent asymptomatic infection of the blood stream. The disease has recently shown a tendency to migrate and it is possible that it may become a serious public health problem.

PRESIDENT'S MESSAGE*

TO THE MEMBERS OF THE MEDICAL SOCIETY:

I am very happy to receive this generous reception on my appearance for installation as President. Needless to say I am deeply moved as I take over this gavel of authority. I want you to know my appreciation for this confidence and honor will be shown by my determined and continuous will to serve. I am taking over the work, which ends an active and successful year. Dr. Emmett has followed age long professional traditions; his work reflects progress and growth; his administrative ability marks him a great leader and a forceful man. I know the members of this Society owe him a great debt of gratitude for services rendered.

I have adopted this slogan for our Society for the year: In war win; after peace progress.

As we face today's realities, serious and momentous medical problems are in the making. Post war planning even now calls for some constructive action and very serious thought. It seems that a broad foundation for a national plan of social security and freedom from want is now being laid. The medical profession while it should not lose its individuality, its independence or those forces of aspiration, it should follow the pattern of national thinking for social progress. We are called on now to make decisions to meet new health problems, prehospitalization plans, and a better distribution of medical service—but we must see to it that those sacred and personal relations between doctor-patient are not lost. It seems we may also have to plan for the betterment of professional service under changing conditions. We are trained for service, our lives are dedicated for the treatment of human ills. Our profession has always carried the touch for the fixed advancement of man and successfully solved whatever problems it has confronted. Soon we will be called on to help build the world of tomorrow; we can do it, but I don't think we want to see all phases of medical service vested in the hands of a lone man. The trend of the times do point to new changes in the approach to our social problems and social ills. We have to influence these changes and the trend of medical practice, and not leave medicine for the manipulation of certain government agencies. We are faced with gigantic problems and it does call for the best thought and brains of the profession, but we have always solved our problems in the past.

After-war planning seems to be the keynote of all talks and public gatherings, and future planning seems to be the highlight now in professional endeavor. We must, however, give some serious thought

*Remarks made by Dr. Bowyer in taking office at the close of the annual meeting of the Medical Society of Virginia, Roanoke, October 27.

to our every-day problems—childbirth, child health, growth, security and old age. During these trying times the profession must keep its fingers on the pulse of the physically and mentally ill. Although the conflict has called many of the doctors to the armed forces we must see that no group or sections of the people are neglected. Here I want to take time out to identify and praise Hugh Trout for the splendid work he has done, and is doing, as Chairman of the Procurement and Assignment Service of Virginia. The Society owes him a lasting debt of gratitude. His office also shows that every doctor in the State has willingly dedicated his services to our country, whether in armed forces or for civilian needs—a voluntary record of which we are proud. Let me also say here that we should make a solemn pledge to protect and insure the interest and practice of those who have left home, closed their offices and offered all for their country. We must see that these doctors are not "sold short" while they are away fighting the Huns and Japs.

About 18 years ago, on this floor, I first heard the words "Socialized Medicine", and each year there has been a public rumbling which has made our Society a little more conscious of its meaning. Later the phrase State Medicine was coined, and this coin has passed from group to group of those who have advocated its plan. Now we may be faced with its meaning Political Medical Practice. During all these years our Society has been on the defensive; we have defended private medicine or organized medicine, but have not taken the offensive; we have offered but little constructive plans to meet the changing conditions and changing thoughts of the people. We must wake up and show we have a creative faith in our organization; that the Medical Society of Virginia can "promote the science and art of medicine, the protection of public health and the betterment of public health, and the betterment of the medical profession", better than any other agency. We are not going to see the physicians robbed of those aspirations which sustain the constant upward advancement and growth of medicine. The people must learn this fundamental fact; regimented medicine cannot insure health.

The outstanding progress in medicine has been made during the last quarter of the century, during our time and under our present system. Why is it that private medicine has made such strides? Why has life expectancy been so greatly lengthened, and life made richer and happier? Why have we better doctors and more doctors per capita than any other nation? Why are our hospitals now used as a model by all other countries? Why are our medical schools considered the most thorough and the best? Private medicine proves conclusively its soundness by such results.

This war with its growing intensity, its constant call for doctors and more devotion to war needs may necessitate some distribution of medical service for civilian needs by some state agencies or National Public Health during the emergency, but the doctors should formulate or approve such plans.

Now coming home, we don't seem to be aroused even to the present day problems confronting us in protecting the health of the public and the advancement of medicine. How many of you have taken a deep interest in the report of the Healing Arts Commission, which is to be presented? We should have a sound Basic Science law which would require high standards of attainment to practice. What are you doing about it? A law licensing chiropractors should be commensurate with the high standards of the medical profession, and judged by our Medical Examining Board. Frank Johns has worked hard, and members of his committee have devoted a lot of time and presented impressive argument for even higher standards before the Healing Arts Commission, but your Legislatures have not felt the weight and deep interest of the profession. We are not making a concerted stand for the health protection of the people of the State and the advancement of medicine. You seem satisfied to leave this important duty to a few members of your Society.

In closing, in assuming duties of office, I want to say, I am deeply impressed with the gravity of the work and am greatly concerned over the future welfare and progress of our Society. I am depending on the support and help from the officers, the Council, House of Delegates, Committees, Publication Staff, our efficient Secretary and every member of the Society. We may be in a transition period but I plan to keep in the middle of the road and follow those medical standards and policies which have inspired our work and insured our progress.

C. B. BOWYER.

Societies

The Augusta County Medical Association

Held its regular quarterly meeting in Waynesboro on November 3rd under the presidency of Dr. A. M. McLaughlin. There was an attendance of approximately forty-five doctors. The scientific program was a discussion of Peptic Ulcer. Lt. Colonel John A. Lyons, M.C., Staunton, spoke on the surgical treatment and Dr. T. Dewey Davis, Richmond, discussed the medical treatment. A film on this subject was also shown. The discussions were led by Drs. R. P. Bell and Alex. F. Robertson, Jr., both of Staunton. A dinner followed the business session.

Dr. George H. Kinser, Waynesboro, is secretary of this Association.

Roanoke Academy of Medicine.

At the November meeting, the following program was presented: Recent Progress in Ophthalmology by Dr. W. F. Hatcher; Treatment of Tuberculosis by Dr. G. C. Godwin; and A Rare and Interesting Tumor in an Elderly Man, Report of a Case by Dr. B. P. Seward.

Dr. A. M. Groseclose is president of the Academy and Dr. David S. Garner is secretary-treasurer.

Southwestern Virginia Medical Society.

At the annual meeting of this Society, held in Wytheville, September 16th, the following officers were elected: President, Dr. A. B. Graybeal, Marion; vice-president, Dr. W. A. Porter, Hillsville; and secretary-treasurer, Dr. George C. Williams, Pearisburg (re-elected).

The Tazewell County Medical Society

Met at North Tazewell on September 23, with the president, Dr. J. W. Witten, presiding and thirteen other members present.

A guest speaker, Dr. R. O. Rogers, of Bluefield, West Virginia, was asked to discuss features of the Wagner-Murray-Dingell bill which is now being considered by Congress. He expressed the hope that our medical societies or the American Medical Association's Council on Medical Service and Public Relations will soon offer a more feasible plan of our own which will put a better system of preventive medicine in operation and which will provide some better system of medical care for the large group of people in our country who are unable to afford the present cost of good medical care—thereby making the passage of the Wagner-Murray-Dingell bill unnecessary.

J. A. ROBINSON, *Secretary.*

News

A Successful Meeting.

The recent meeting of the Medical Society of Virginia in Roanoke was voted a great success. There was a registered attendance of four hundred and four doctors, besides exhibitors and the ladies who attended the Auxiliary meeting. Dr. J. M. Emmett presided at the business and most of the scientific sessions. The Society was fortunate in having as guest speakers medical men who had seen foreign service in the present war, and gave interesting accounts of the medical work, especially in the Pacific theatre.

Reports of the business sessions, which gave also names of new officers, etc., appear elsewhere in this issue of the MONTHLY. An invitation extended by the Richmond Academy of Medicine to have the 1944 meeting in Richmond was unanimously accepted and we look forward to another good meeting next year.

Dr. C. B. Bowyer of Stonega succeeded to the presidency at the closing session. Dr. H. B. Mulholland of the University of Virginia was named president-elect.

The new President's committees, as selected at time of going to press, follow the proceedings of the 1943 meeting.

The Virginia Obstetrical and Gynecological Society

Held a luncheon meeting at Hotel Roanoke, Tuesday, October 26th, at time of the State Society meeting. This was well attended and members participated in a round table discussion of the maternity hospitalization plan for wives and infants of service men.

The following were elected officers for the coming year: President, Dr. A. L. Carson, Jr., Richmond; vice-president, Dr. S. E. Oglesby, Lynchburg; secretary and treasurer, Dr. L. L. Shamburger, Richmond.

Virginia Orthopedic Society.

At the luncheon meeting of this Society in Roanoke, October 26th, Dr. J. B. Dalton and Dr. James T. Tucker, both of Richmond, were re-elected president and secretary, respectively, for the ensuing year.

The Virginia Pediatric Society

Held its annual meeting at luncheon, in Roanoke, October 26th. Officers elected for the coming year are: President, Dr. Edwin A. Harper of Lynchburg; vice-president, Dr. Robert Hightower of Alexandria; and secretary-treasurer, Dr. Emily Gardner of Richmond.

The Virginia Radiological Society

Held its annual meeting in Roanoke, October 26th, at luncheon, at which time matters of interest were discussed. Dr. Clayton W. Eley of Norfolk was elected president; Dr. W. P. Gilmer of Clifton Forge vice-president; and Dr. E. Latane Flanagan of Richmond secretary-treasurer.

The Virginia Urological Society,

Meeting at luncheon in Roanoke, October 26th, elected Dr. T. B. Washington of Richmond as president; Dr. Samuel A. Vest of University of Virginia as vice-president; and re-elected Dr. Warren W. Koontz of Lynchburg as secretary-treasurer. The next meeting will be a joint scientific and social one at time of the next meeting of the Medical Society of Virginia in Richmond.

The Virginia Section, American College of Physicians,

Held a short session in Roanoke, October 26th, following luncheon. Dr. Wyndham B. Blanton, Richmond, was elected president, and Dr. Alex F. Robertson, Jr., Staunton, was re-elected secretary-treasurer. For the period of the war, this section will continue to hold an annual luncheon meeting at time of the meeting of the Medical Society of Virginia, but will give up the Fall and Spring meetings previously held.

Medical College of Virginia News.

Commencement exercises closing the one hundred sixth session of the college will be held at the Mosque auditorium on the night of December 18. Mr. John Temple Graves, III, editor of the *Birmingham Age-Herald* will be the speaker. There are one hundred nine candidates for graduation: 74 in medicine; 26 in dentistry, and 9 in pharmacy. Due to the accelerated program the school of nursing will not graduate a class until September, 1944, as this school is now accepting two classes each year.

The 107th session of the college will begin on December 30, 1943.

Dr. W. T. Sanger, president, Dr. Jacques P. Gray, dean, and Dr. Roshier W. Miller, professor of materia medica, attended a meeting of the Norfolk alumni on November 9.

Dr. Harvey B. Haag, professor of pharmacology, presented a paper on *The Effect of Urinary pH on the Elimination of Quinine* at the meeting of the American Therapeutic Association, November 15, this meeting being held jointly with that of the Southern Medical Association.

Dr. H. Hudnall Ware, Jr., professor of obstetrics, presented a paper on *Premature Separation of the Placenta* at the Southern Medical Association meeting in Cincinnati, Ohio, on November 18.

Dr. W. T. Sanger, president, has been appointed vice-chairman of the Baruch Committee on Physical Medicine. This group under the chairmanship of Dr. Ray Lyman Wilbur will make an intensive study of the need of physical therapy in medicine and the present status of medical education in this field. The committee will have three months in which to formulate its report to Mr. Bernard M. Baruch.

Dr. I. A. Bigger, professor of surgery, recently spoke at Camp Eustis on abdominal wounds, this offering being a part of the cooperation of the college with the War-Time Graduate Medical Committee in sending its faculty members to near-by camps to speak on their specialties.

Dr. Frank Langfitt of Clarksburg, West Virginia, was a recent college visitor.

Armistice Day exercises were held at The Monumental Church at noon on November 11. Dr. W. Lowndes Peple of Base Hospital 45 Veterans' Association spoke briefly on behalf of Dr. Stuart McGuire, honorary commander of the Association. Mr. Thomas C. Boushall, president of the Morris Plan Bank, and a member of the Base Hospital 45 unit in World War I, made the address.

Dr. R. Finley Gayle, Jr., professor of neuropsychiatry, and Dr. H. C. Henry, associate in neuropsychiatry, visited the psychiatric department of the University of Pittsburgh on November 15 while en route to Cincinnati to attend the annual meeting of the Southern Medical Association.

Dr. W. L. Weaver, associate in preventive medicine, gave a talk before the joint sessions of Industrial Hygiene, Food and Nutrition, and Public Health nursing sections of the American Public Health Association at a recent meeting in New York.

Looking Forward.

The final solution of a national problem rests with the local community, therefore, the basic unit for tuberculosis work is the local administrative unit.

Experts beieve that tuberculosis can be controlled and eventually eradicated. An important and vital part of the local control program lies in the hands of our volunteer tuberculosis associations. Whether we shall maintain our gains in wartime depends solely upon the determination of the men and women we call our community leaders.

If the local tuberculosis associations are to continue their present activities and meet the challenge of a wartime increase in tuberculosis they must have the support of the men and women in the local communities—these men and women must buy Christmas Seals—the sole support of these organizations.

This country is now short 40,000 hospital beds for tuberculous patients, more may be needed after peace is won. Physicians, nurses and civilian personnel will be available again. Sanatorium and clinic standards will have to be improved. All this means planning now.

Peace must find the country ready, not only to reconquer any lost ground in the battlefields of tuberculosis but also prepared to hasten the day when this disease will no longer be THE ENEMY OF THE COMMON MAN!

The annual Christmas Seal Sale opened on November 22nd and continues until Christmas. This is the sole support of the tuberculosis associations and they need your support now more than ever.

A Post-Graduate Course in Diseases of the Eye, Ear, Nose and Throat.

The Virginia Society of Ophthalmology and Oto-Laryngology will hold its tenth annual post-graduate course in the Baruch Auditorium of the Medical College of Virginia, December 7, 8, 9, and 10. Among the speakers will be: Dr. Oscar V. Batson, Dr. John A. Kolmer, and Dr. Edmund B. Spaeth of Philadelphia; Dr. Leroy A. Schall and Dr. Theodore L. Terry of Boston; Dr. Henry B. Orton of Newark, N. J.; Dr. Warren T. Vaughan of Richmond; Dr. Ferris Smith of Grand Rapids, Mich. Dr. John J. Shea of Memphis, Tenn.; Dr. Peter Kronfeld of Chicago; Dr. Algernon B. Reese and Dr. Ramon Castroviejo of New York City.

Dr. H. L. Baptist

Announces that he has located at 205 Twenty-Seventh Street, Newport News, where he will continue in practice.

Promotions in the Service.

The following promotions have been noted for Virginia doctors in the Service:

Dr. Hal Davis of Roanoke to captain.

Dr. Louis A. Houff of Clifton Forge to major.

Dr. M. A. Johnson of Roanoke to lieutenant colonel.

Dr. Rupert W. Powell of Roanoke to major.

Dr. David B. Stuart of Roanoke to major.

Dr. Oswald M. Weaver of Colony to major. Major Weaver is now Post Surgeon of the new Prisoner of War Camp being activated at Indianola, Nebraska.

The West Virginia State Medical Association

Will hold its 77th Annual Meeting in Wheeling, May 15-16, 1944. Headquarters will be the Windsor Hotel.

Dr. S. K. Livingston,

Formerly located at White River Junction, Vt., is now at West Roxbury, Mass., where he continues with the Veterans' Administration. He is a graduate of the University of Virginia.

Virginia Cancer Foundation.

At the meeting of the Foundation held on October 19th, the following doctors were re-elected officers: President, Dr. J. Shelton Horsley, Richmond; treasurer, Dr. W. Dan Haden, Charlottesville; director, Dr. Edwin P. Lehman, University; and assistant director, Dr. George Cooper, also of University. Dr. Claude B. Bowyer, Stonega, President of the Medical Society of Virginia, was elected to the Board of Trustees. Other new trustees are Mr. George B. Zehmer and Dr. George Cooper, University of Virginia; Dr. W. Dan Haden, Charlottesville; and Dr. L. C. Downing, Roanoke. Among those re-elected are Drs. I. A. Bigger and George Zur Williams, Richmond; Dr. Harvey E. Jordan, University; and Dr. Hugh H. Trout, Roanoke. Dr. James A. Cash, University, was named chairman of a committee on fellowship for cancer study.

The officers paid tribute to the influence and service of Dr. Wright Clarkson who was founder and original director of the foundation.

Dr. James A. Dolce,

Health officer of Prince William-Stafford County Health Department, Manassas, has resigned from that position effective December 1st.

A.M.A. to Have Scientific Exhibits in 1944.

The Scientific Exhibit at the Chicago Session of the American Medical Association, June 12-16, 1944, will be held at the Palmer House. Exhibits will cover all phases of medicine and the medical sciences with particular emphasis on graduate medical instruction for the physician in general practice.

Application blanks for space in the Scientific Exhibit are now available and may be obtained by communicating with the Director, Scientific Exhibit, American Medical Association, 535 N. Dearborn Street, Chicago 10, Illinois.

The American Board of Ophthalmology

Announces that the deadline for filing applications for the 1944 examinations to be held in June in New York City is December 15, 1943. Applications for the examinations to be held in Chicago in October may be filed by April 1, 1944.

Lt. Weir M. Tucker, M.C.,

Of Richmond, has been assigned to the Newton D. Baker General Hospital at Martinsburg, W. Va., as psychiatrist.

Dr. Edwin F. Gouldman

Has resumed his practice at Colonial Beach after a couple of years engaged in special study in New York, Ohio and Tennessee.

Dr. Floyd E. Boys,

Formerly an assistant professor of surgery at the University of Virginia, has been honorably discharged from the U. S. Naval Reserves, and has located for practice in Indianapolis, with offices in the Bankers Trust Building.

Southern Medical Association.

At the meeting of the Association in Cincinnati, the middle of November, with Dr. Harvey F. Garrison of Jackson, Miss., presiding, there was a registered attendance of about seventeen hundred and fifty. Dr. W. T. Wootton of Hot Springs National Park, Ark., succeeded to the presidency, Dr. E. G. Ballenger of Atlanta, Ga., was named president-elect, and Dr. James A. Ryan of Covington, Ky., vice-president. Dr. Thomas W. Murrell of Richmond continues as councilor from Virginia. The 1944 place of meeting will be announced later.

Dr. J. P. Scott,

Who was located for a time at Olive Hill, Ky., after leaving Martinsville, Va., is now at 910 Second National Bank Building, Ashland, Kentucky, where he resumed the practice of medicine on the first of this month. His work will be limited to surgery and gynecology.

Dr. H. Ward Randolph,

Richmond, announces the removal of his residence and office to 3202 Chamberlayne Avenue, this city.

For Sale.

Picker Shockproof Comet X-ray Unit—Style T-6, 220V, 60 cys., 30 amp. Rotating tube. Westinghouse table, Bucky diaphragm synchronized with X-ray unit—cassettes. Accessory dark room and other equipment. Also Sanborn Commander Short Wave Diathermy, Type C-V, No. 5098, 1942 model, and Sanborn Waterless Basal Metabolism apparatus with oxygen tank. 1942 model. All in first class condition. Mrs. William Watkins, Halifax, Va. (*Adv.*)

For Sale—

A General Electric X-ray Machine, guaranteed in good order. Address, Dr. J. W. D. Haynes, Mathews, Va. (*Adv.*)

Obituaries

Dr. Griffin W. Holland,

Prominent Eastern Shore physician, died October 23rd at his home in Eastville, having been in ill health for some time. He was sixty-nine years of age and a graduate of the Department of Medicine, University of Virginia, in 1896. Dr. Holland had practiced on the Eastern Shore since his graduation, except for two years in which he was affiliated with the United States Public Health Service and located in Tennessee. He had been a member of the Medical Society of Virginia for forty-one years and had served as Councilor from the first district since 1933. Three daughters and two sons survive him.

The members of the Northampton County Medical Society wish to record in their minutes the following resolutions upon the death of Dr. Griffin W. Holland—one of its most beloved and active members:

WHEREAS the Lord in His infinite wisdom has taken from our midst Dr. Griffin W. Holland, one of our most honored and respected members of the profession:

BE IT RESOLVED that the members of the Northampton County Medical Society mourn the loss of one of their most valued members; a man of the highest principles; a man who always fought to uphold the ethical and moral standards of his profession; a man who was conscientious and charitable to his fellowman at all times; a man who could always find time to lend his influence in affairs of his community in civic, political and religious administrations:

Truly was he a man respected, honored and beloved by all who knew him.

BE IT FURTHER RESOLVED that knowing him to be a man of high Christian standards we fully realize that our loss is his gain,

BE IT FINALLY RESOLVED that we, the Northampton County Medical Society, extend to the family our deepest and most heart-felt sympathy for them in their bereavement, and that a copy of these resolutions be sent to the family and a copy to the VIRGINIA MEDICAL MONTHLY.

J. GATES GOODE
J. WALKER JACKSON
S. K. AMES
Committee.

Dr. Franklin Davis Wilson,

Prominent Norfolk pediatrician, died November 17th, his death being attributed to overwork. He was born in Norfolk in 1882. His professional career began as a pharmacist but he received his medical degree from the University of Maryland in 1908. Dr. Wilson practiced in South Norfolk until 1918 when he went to Boston for 18 months to prepare for the specialization of pediatrics, following which he returned to that city. Dr. Wilson was a man of deep religious conviction and was a member of the Society of Friends. He was also active in medical affairs, having served as president of the Norfolk County Medical Society, and was a member of numerous medical organizations, including the American College of Physicians and the American Society of Pediatrics. Dr. Wilson joined the Medical Society of Virginia in 1910, and had served on the Child Welfare Committee since 1933, having been named its chairman in 1936. His wife, a son and two daughters survive him. A brother is Dr. N. G. Wilson, also of Norfolk.

Dr. Frederick Casper Rinker,

Prominent physician of Norfolk, died November 15th. He had attended the meeting of the Medical Society of Virginia in Roanoke and had been sent home on account of illness from which he never recovered. Dr. Rinker was fifty-eight years of age and a graduate of the Department of Medicine of the University of Virginia in 1911. Following his graduation, he served for six years as associate professor of medicine at the University of Wisconsin and located in Norfolk in 1919. At the time of his death, Dr. Rinker was president-elect of the Norfolk County Medical Society. He was a fellow of the American College of Physicians and a member of the American Board of Internal Medicine, and had been an active member of the Medical Society of Virginia since 1920. His wife, two brothers and a sister survive him.

Dr. William O'Connor Cox,

Prominent Southwest Virginia physician, died of a heart attack at his home in St. Paul, October 20th. He was a native of Scott County and was 58 years of age. Dr. Cox was a graduate of the University College of Medicine, Richmond, Va., in 1912 and served an internship at Virginia Hospital. He was a member of the Wise County Medical Society, Clinch Valley Medical Society, and the Medical Society of Virginia. He was also a member of the Board of Directors of the St. Paul National Bank. He is survived by his wife, a daughter, and a son.

Dr. Humphrey William Curtis,

Hilton Village, died October 19th, at the age of sixty-seven. He was a graduate of the Medical College of Virginia in 1901. Dr. Curtis was prominent in civic and medical affairs, having served as Warwick County Coroner and superintendent of the County Board of Health. He was formerly a member of the Medical Society of Virginia. His wife and a son survive him.

Dr. William A. Smith,

Well-known physician of Madison, died November 10th. He was eighty-eight years of age and received his medical degree from the University of Maryland in 1880. Dr. Smith had been a member of the Medical Society of Virginia since 1904. A son survives him.

Resolutions on Dr. Clarkson.

A special meeting of the Petersburg Medical Faculty was held October 17, 1943, to pay tribute to the memory of their late colleague, Dr. Wright Clarkson, who died that day. The following resolutions were adopted:

WHEREAS in the death of Dr. Wright Clarkson this body lost one of its most beloved and valued members and his death has saddened our hearts,

BE IT RESOLVED THEREFORE that in his passing we feel that the medical profession of Virginia and of the country have sustained a great loss.

In his death, not only the medical profession but the community and State as a whole have lost a most valuable and useful citizen, for his activities were not only confined to his profession, but he was always active and eager in every enterprise or movement for the betterment of mankind.

As a young man he served in the Medical Corps during the first World War. Later he became a member of the Naval Reserve Medical Corps in which he held the rank of Lieutenant Commander.

He will be remembered for his leadership in organized medicine. He organized the Fourth District Medical Society, he was a delegate to the American Medical Association from the State of Virginia. He founded and was a president of the Virginia Cancer Foundation. He was a past president of the Association of the Study of Neoplastic Diseases, and a member of American College of Radiology, American Roentgen Ray Society, Radium Society of North America and the Southern Medical Association.

BE IT RESOLVED THEREFORE, that the Petersburg Medical Faculty offers to his widow and son, his parents and sisters their sincere and deep sympathy in their irreparable loss, and

BE IT RESOLVED that these resolutions be spread on the minutes of the Faculty, and a copy sent to the family, the VIRGINIA MEDICAL MONTHLY and that they be published in the *Progress Index.*

J. M. WILLIAMS, Chairman
H. M. SNEAD
C. S. DODD

Resolutions on Dr. Fitts.

The Manchester Medical Society, desiring to express a tribute of respect to the memory of one of its most active and honored members, Dr. J. Blair Fitts, places the following resolutions in the permanent records of the Society.

WHEREAS, God in his infinite and infallible wisdom on August 19, 1943, removed from our midst a true friend and loyal member: now, therefore, be it

RESOLVED: (first) that the Manchester Medical Society bows in submission to the divine will, though deeply mourning and regretting the loss of a member who was fully aware of the dignity of his calling and whose chief endeavor was the relief of human suffering.

RESOLVED: (second) that in the death of Dr. Fitts the profession has lost a valued associate and the community a useful citizen; for his ministry was to all status in life but notwithstanding this he found time to lend his influence actively in the administration of the affairs of his church and community.

RESOLVED: (third) that he was of enviable ideals and principles and always tenaciously fought to uphold and elevate the practical, moral and ethical standards of his profession, of the hospitals with which he was associated and of his community.

His errors were of judgment and not of heart—and many services rendered in the last years of his life were at the expense of his own comfort and health.

RESOLVED: (fourth) that the Manchester Medical Society offers to his widow and children their sincere and deepest sympathy in their bereavement and that the Society realizes it may not soon find one to fill the chair he so suddenly left vacant.

BE IT FINALLY RESOLVED: that a copy of these resolutions be sent to the family and to the VIRGINIA MEDICAL MONTHLY.

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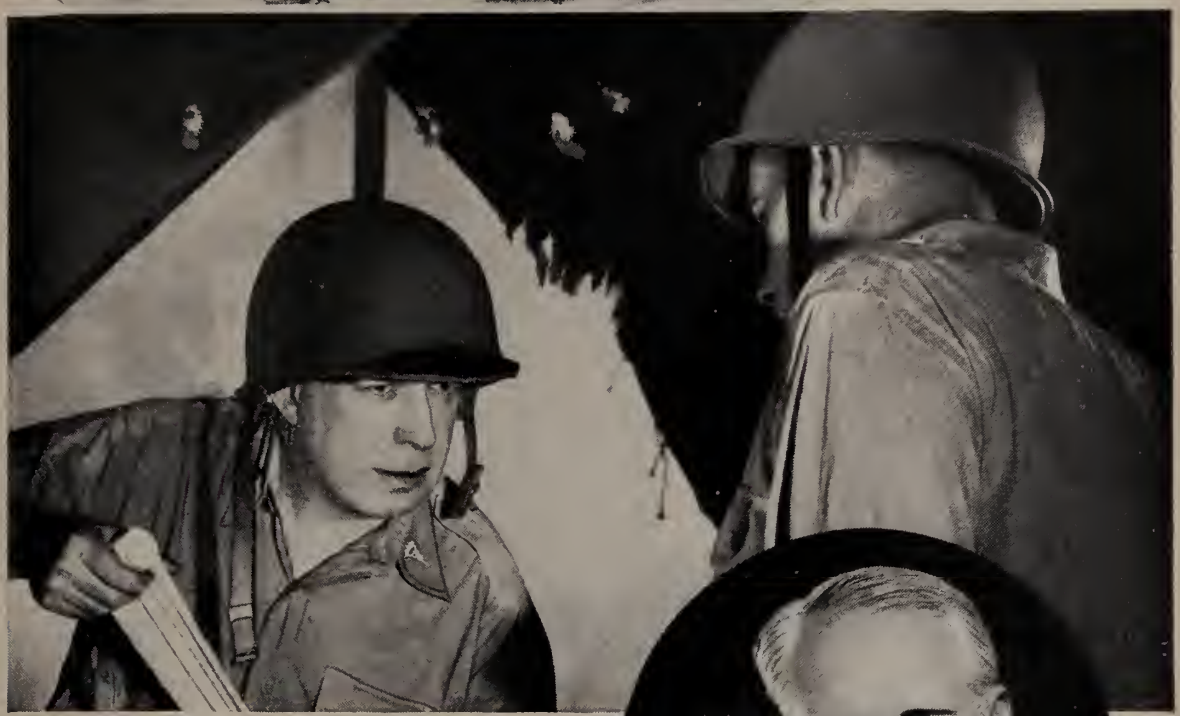

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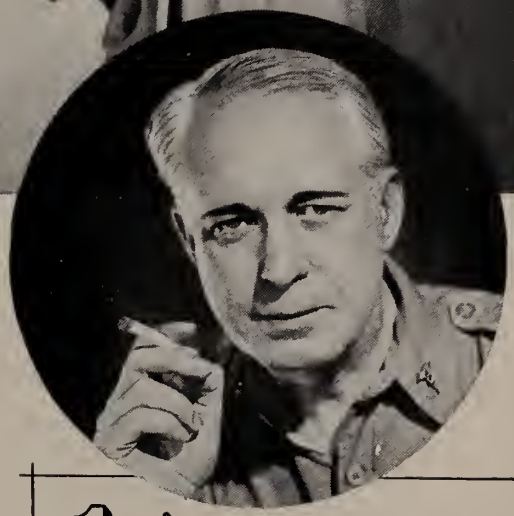

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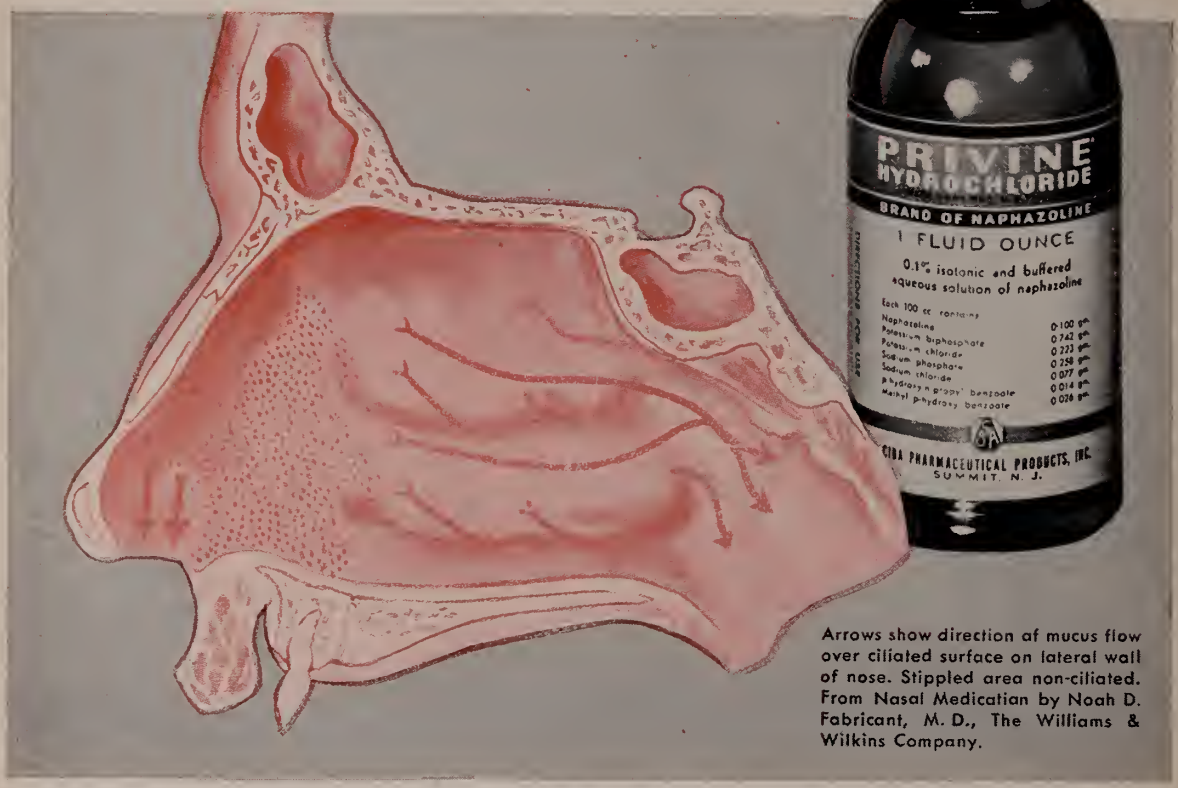

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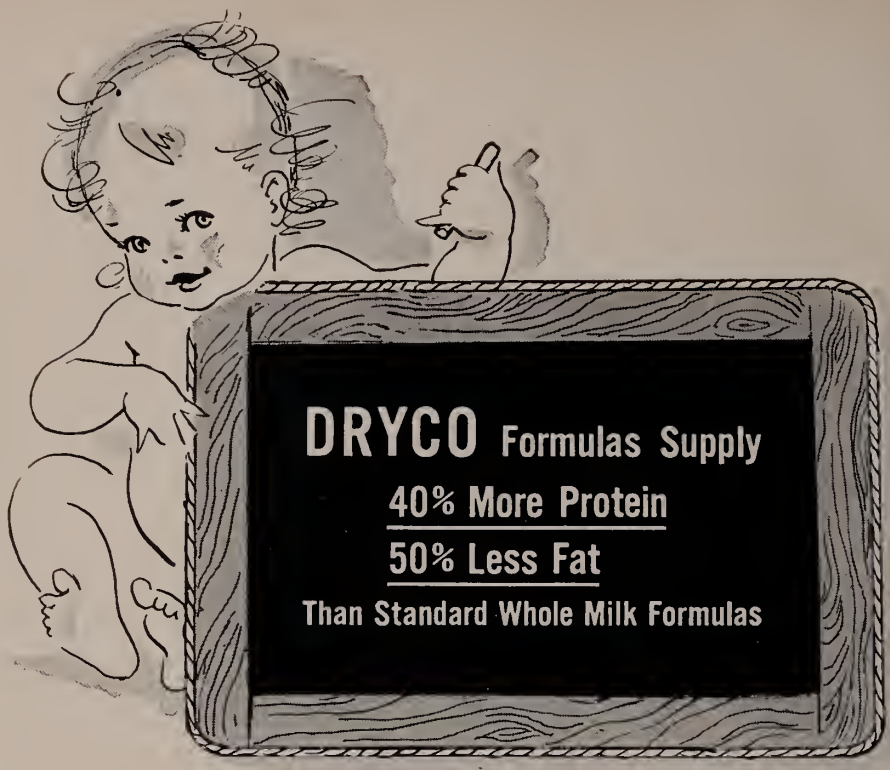

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